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USAR Recruiting and Manpower
in the 21st Century

Stephen L. Mehay

December 1993

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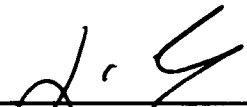
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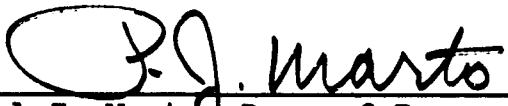
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The reserves components are beset by changes that are unprecedented in their magnitude and complexity. In addition to the usual demographic, economic, and social changes that affect the external reserve recruiting environment, the downsizing of the armed forces, federal budget deficits, and the Persian Gulf war have all exerted unusual pressures on reserve policymakers. Indeed, the changes being introduced or planned for the Reserves are the most extensive since the advent of the all-volunteer force in 1973. They involve the active-reserve mix, the missions to be assigned to the reserves, as well as manpower requirements and recruitment policies. It is in this unique context that this report attempts to sort out some of the factors -- both external and internal -- buffeting the reserves, to identify the trends in these factors, and to indicate likely future effects on the U.S. Army Reserves.

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USAR RECRUITING AND MANPOWER IN THE 21st CENTURY

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EXECUTIVE SUMMARY

The reserves components are beset by changes that are unprecedented in their magnitude and complexity. In addition to the usual demographic, economic, and social changes that affect the external reserve recruiting environment, the downsizing of the armed forces, federal budget deficits, and the Persian Gulf war have all exerted unusual pressures on reserve policymakers. Indeed, the changes being introduced or planned for the Reserves are the most extensive since the advent of the all-volunteer force in 1973. They involve the active-reserve mix, the missions to be assigned to the reserves, as well as manpower requirements and recruitment policies.

It is in this unique context that this report attempts to sort out some of the factors — both external and internal — buffeting the reserves, to identify the trends in these factors, and to indicate likely future directions in them. In part, the purpose of this report is to detail various trends that affect the external environment within which reserve recruiting occurs and manpower decisions are implemented. But the report also attempts to develop the implications for reserve manpower and recruiting of the trends in internal Army structure and policies. The report attempts to identify the most important trends that affect the reserves, and to project the future direction of various factors that will affect the success of reserve recruiting and unit manning and readiness levels throughout the 1990s and into the 21st century.

The environment within which the Reserves operate is extraordinarily complex and one in which many factors interact. In order to determine the nature of the future environment, numerous subject areas must be addressed. To that end, the report begins by reviewing the structure, command, and manpower status of the U.S. Army Reserve (USAR). It then turns to an analysis of some of the demographic, social, youth labor market, and economic trends particularly important to Reserve recruiting. It also reviews various econometric models that have attempted to assess the magnitude of the relationships between economic and demographic factors and reserve enlistment supply. The report also discusses internal Army policy directions and attempts to develop future scenarios based on likely future force structures. Finally, the report integrates the trends and scenarios with the specific analytical models used by the U.S. Army Recruiting Command to determine Reserve recruiter zones and missions, local market supportability, and long-range stationing plans.

It is impossible to summarize all of the trends that are reviewed in the body of this report. Some trends may have only a small, indirect effect on reserve recruitment, while others may have an extremely important, direct impact. Moreover, many internal Army and DoD policies are in a state of flux which adds a degree of uncertainty to very basic parameters, such as the active-reserve mix, the missions to be assigned to the reserves, and the size and structure of the reserves. Despite these uncertainties and imponderables, some of the key trends can be identified.

CHANGES IN FORCE STRUCTURE

The reduction from a 5-Corps 27-Division Army 86 to the anticipated 4-Corps 20-Division Army of the mid-90s will require significant reorganizations of both active and reserve forces. The instability caused by changes in mobilization requirements leading to personnel reassignments, unit redesignations, relocations, and the disestablishment of units and creation of new units can result in thousands of personnel actions per month. Army Recruiting Command must be particularly sensitive and responsive to these changes since MOS-specific vacancies, unit locationing, and reserve accessions and attrition all could be affected.

Efforts to reduce the Reserve Components have been delayed by Congressional directive and current studies will certainly revise these proposals in the final structure. The Secretary of Defense has indicated that in applying the new strategy of total-force structure, the overall U.S. Reserve forces will decline by about the same percentage as active forces; however, future forces will not merely be a proportionally scaled-back version of existing structure. What this means in terms of future reserve force structure and recruiting goals is unclear at this time.

The importance of continuing to recruit for and maintain an Army Reserve in a constant state of high readiness cannot be compromised during this time of reorganization. The Army will continue to rely extensively on the reserve components to reinforce extended contingency operations, to deal concurrently with a second major contingency, and to hedge against a resurgent and hostile Russia or other large-scale threats to U.S. security.

The priorities of recruiting for specific reserve units may need to be revised. As budget constraints limit manpower ceilings without corresponding reduction of force structure, a primary principle of strategic policy stresses that priority in staffing, equipping, and training should be given to those units that are expected to deploy first. In the Gulf war it was Army Reserve support forces — traditionally deficient in terms of personnel, equipment, and training in peacetime — which were the first

forces needed. Meanwhile, National Guard combat units, which received a high priority for resources prior to the war, remained in training at its conclusion, and were never deployed.

DEMOGRAPHICS

The implications of population growth and distribution are crucial to recruiting for the reserves and to maintaining unit strength and readiness levels. Since most Reserve units must be filled by the population in the local market (generally defined as a 50-mile radius of the reserve center), the ability to support the manpower requirements of local units depends on the population supply. Regional demographics of the country have changed dramatically: population growth has shifted from rural America and urban centers to suburban centers, and population continues to migrate from the Midwest and Northeast to the South and West. Numerous shifts of population have also occurred within metropolitan areas. In addition, neighborhoods and communities have been observed to follow demographic cycles which affect the distribution of the youth population. All of these factors affect the ability of local markets to support specific units and provide clues as to the areas that will provide the greatest recruiting successes.

LABOR MARKETS AND ECONOMICS

Economic, labor and social trends will also affect future recruiting efforts. By 2000, the labor force will be dominated by 35 to 54 year-olds, who will constitute one-half of all workers. With many pension and retirement plans not keeping pace with rising cost-of-living, the Bureau of Labor also anticipates the trend toward early retirement will end — a trend which is already limiting upward mobility for young enlistees in the Army Reserve.

However, econometric studies indicate that changes in the size have the youth population have a minor, and perhaps insignificant effect, on reserve enlistment supply. By contrast, the military-civilian pay ratio may play a very important role. Differences in pay across regions and metropolitan areas must be monitored closely to pinpoint potential recruiting problems. However, Nationwide Civilian Youth pay, in real terms, dropped during the 1980s and is expected to continue to drop throughout much of the 1990s. So long as military increases do not drop proportionally, this factor should ensure favorable reserve recruiting for many future years.

Three of the four occupations expected to offer the greatest number of jobs in the coming years — retail sales, custodial, and food service — do not require a high school diploma. Military occupation skills, often promoted in the reserves are

"civilian- career enhancing", may not meet the continued shift from a manufacturing to a service economy and many factory workers who depended on their manual skills to earn a good living will have to take lower-paying jobs in the service.

The major challenge of the future may lie less in balancing employers' need with workers' skills, than in balancing workers' personal needs with job demands. Middle-aged reservists will need alternatives to dead-end positions in both their civilian employment and reserve careers. Also, the continued influx of women into the work force, including the military, ensures that child- and elder-care issues will grow in importance.

PLANNING FOR FUTURE RECRUITING FOR THE RESERVES

Under the rearming of America during the Reagan administration, the Army preferred modernizing its equipment to expanding its force. Consequently, its dependence on the Reserve and National Guard grew. Such a degree of dependence would not be a source of concern if reserve components came close to matching their active-duty counterparts in capability and readiness. But they do not: many units lack equipment; much of the material is not up-to-date; facilities are poorly located relative to recruiting markets; and training time is limited.

An adequate long-term market strategy must be developed to determine manpower resources and locationing, must be avoided. The ability to man the Total Force Structure is paramount. Recruiting for readiness is the key component to mobilization success and it cannot be achieved without maintaining quality while reducing attrition losses. As reserve forces continue to modernize, recruiting command cannot be expected to maintain reserve unit strength without in-depth knowledge of local market realities and resource requirements.

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I. INTRODUCTION

Perhaps no single military component is being buffeted as severely by the winds of change blowing throughout the world as the reserves, and no reserve component more so than the United States Army Reserve. The collapse of the Berlin Wall in Europe, the elimination of the Warsaw Pact as a serious threat to NATO, and the disintegration of the Soviet Empire have held serious repercussions for the size and shape of the U.S. military. The mobilization and subsequent combat in the Persian Gulf also has provided important, but different lessons, for military force structure.

The reserve components are affected by both internal policy decisions and external factors. These changes will affect the types of units to be filled, the quantity and quality of members needed to fill them, and the geographic location of the units. For example, cost-cutting pressures exerted by federal budget deficits have made the lower-cost reserves an attractive alternative for units and missions formerly located in the active force structure. But the general downsizing of the military has suggested that cuts in reserve forces should be proportional to cuts in the active forces. Thus, the basic question of the optimal reserve-active force mix has been reopened by recent political and economic events. In addition to shifts in overall policies, the reserves are buffeted by the same demographic and social changes that affect all military manpower. These include declining birthrates, aging of the population, shifts in various demographic segments (females, blacks, Hispanics, and immigrants), and significant regional population shifts.

However, while some trends affect both active and reserve recruiting, others are important only to the reserves. For example, differential changes in employment, economic conditions, and population in local communities in which reserve units are located can have devastating effects on reserve recruiting and manning, but barely disturb active force recruiting. The reason is simple: the reserves must recruit for the specific number and type of billets that reside at a local reserve center; the active forces, on the other hand, can recruit nationwide. When recruiting conditions worsen in one area, active force recruiters can simply shift to greener pastures.

Local economic conditions represent one set of factors that can affect individual enlistment choices and thus reserve recruiting. Changes in local job availability, the types of available jobs, unemployment levels, and civilian pay levels all play a role. The nature of these relationships is somewhat uncertain as it is not clear whether reserve participation represents a type of "moonlighting" labor supply decision, or

simply represents "compensated leisure." The local recruiting pool is also affected by changes in the size of the youth population, which can change rapidly due to changes in internal migration (and, recently, immigration from abroad), as well as changes in birth rates. Recruiting competition can be especially intense for the USAR. They face competition for non-prior service recruits not only from other reserve components, especially the National Guard, but also from all of the active components. These relationships are further complicated by the fact that the reserves obtain their recruits from two disparate supply sources: non-prior service and prior service enlistments. Changes in local economic conditions are likely to affect these two sources differently.

It must also be recognized that local economic conditions affect attrition and reenlistment decisions in Army Reserve units, which affect manning levels and reserve accession missions. The relationships between changes in local economic and employment conditions and unit attrition have not been investigated extensively.

The above factors are all *external* to the USAR. In this post-Desert Shield/Storm, post-USSR era, numerous *internal* policy changes are also affecting reserve recruiting directions and clouding our ability to project the future position of the USAR. Indeed, current military policies are in a state of flux concerning very basic parameters, such as the active-reserve force mix. The current mission of the Reserve Forces has been given increased emphasis. This and other changes could force adoption of numerous new manpower policies with respect to enlistment eligibility standards, mission requirements regarding quality and gender, selection of unit locations, personnel assignment procedures and priorities, and training concepts. Changing force structure coupled with end strength limitations will mandate that every enlistment in the reserves contribute to the readiness and mobilization capabilities of the Total Army.

The complexity of the reserve manpower world is underlined by the extent and nature of the functions performed by the U.S. Army Recruiting Command. USAREC is responsible for more than simply reserve recruiting and meeting the reserve accession requirement. In general, USAREC must analyze the potential of geographic markets in terms of "supporting" reserve units. For example, USAREC must evaluate the market potential of locations for newly established units or for relocated units. The analyses produced are called Market Supportability Studies (MSS) and will be discussed fully later in this report. Supportability requires that the new or relocated unit be "successful" in filling its authorized billets within a five year period. USAREC is also responsible for analyzing geographic market areas in terms

of future site locations. The National Market Analysis (NMA) looks forward several years to determine which geographic areas will provide sufficient potential to locate new or relocate existing units in the future. It is clear that the stationing process is an integral part of the recruiting and missioning process. Thus, with respect to the USAR, USAREC's responsibilities include the evaluation of the market potential of alternative geographic areas. All of these analyses involve trying to project future (5 to 10 years out) conditions in a local area that could affect the success of an existing or proposed unit.

In short, USAREC provides important input for a number of major questions. What is the total force structure the USAR and Army National Guard (ARNG) will support 20 years in the future? What unit types should be placed in the reserve components? What are the best geographic locations for each unit? What is an acceptable geographic span of command and control? What readiness levels are needed for a variety of mobilization scenarios?

In summary, the environment surrounding reserve recruiting is extraordinarily complex, and is one in which many factors interact in determining the nature of the future environment. The purpose of this report is to detail various trends that affect the external environment within which reserve recruiting occurs and manpower decisions are implemented. In addition, the report discusses some of the trends in the Army's internal structure and develops the implications for reserve manpower requirements and recruiting. The report attempts to identify trends that impact the reserves, and to develop likely projections of various factors that will affect the success of reserve recruiting and unit manning in the 1990s and into the next century.

The report is structured as follows. Section II of the report reviews the structure, command, and manpower status of the USAR, including a brief history of the recruiting implications of Operation Desert Storm. Section III details some of the demographic and social trends that are particularly important to reserve recruiting, while Section IV discusses trends in the youth labor market and the economy. Section V surveys econometric models of the relationship between enlistment supply and economic and demographic factors. Section VI discusses directions in internal Army policies, and attempts to develop future scenarios based on likely future force structures, accession requirements, as well as the external environment. Section VII explores the effect of possible future reserve requirements on USAREC computer models and analyses. Section VIII concludes the report.

II. STATUS OF THE RESERVE COMPONENT

A. STRATEGIC CONCEPT

Perhaps more than ever before, U.S. national security today depends on the reserves. The significance of that dependence for the effectiveness of the Army in combat raises complex questions concerning the structure of active forces that the Army can initially deploy without reserve mobilization, and the period of time the Army can sustain overseas combat operations without a call-up of some portion of the Guard and Reserve. For each conflict scenario — depending on location, duration, and intensity — strategists must plan which reserve units will be required, the minimum and maximum lead time necessary for mobilization and deployment, the replacement of casualties, and the impact on the civilian sector.

The evidence of the past is mixed. The Guard and Reserve played important roles in the Second World War, Korea and the Persian Gulf, whereas in Vietnam, the U.S. Army committed the equivalent of eight regular divisions, but no reserves. However, the deployment was accomplished in a conscription (draft) environment.

Admittedly, the nature of conflict has changed over time and the necessary response varies with each situation. The active forces are now being reduced and conscription is no longer available to provide a low-cost source of manpower. These conditions make the Army's dependence on the reserves more important than ever. This dependence becomes even more critical when one considers U.S. force reductions overseas, which require relocation of active forces to the Continental United States (CONUS), and the cohort dedication of brigade-size reserve units to Active Army standing divisions.¹ In the past, ground forces retained in CONUS were regarded as "general purpose" filler units. Now they are regarded as more specialized to particular conflicts and regions. Regular Army units are likely to be committed, or at least earmarked, for major overseas commands. The relocation and deactivation of units will consolidate commands in CONUS and add significantly to their deployment planning requirements.

Similarly, reserve units receive assignments to commands and regions. Because of this orientation, it has become the standard expectation that in the event of overseas deployment, most regular Army units will be rounded out, augmented, and provided combat service support by specific and pre-designated reserve units.

¹Binkin, Martin and Kaufmann, William W., *U.S. Army Guard and Reserve: Rhetoric, Realities, Risks*, (The Brookings Institute, 1989) pp. 111-112.

Moreover, it is expected that Guard and Reserve forces will be available almost as quickly as their active-duty counterparts.²

The events in the Persian Gulf challenged the soundness of this strategy. The future role of the Army National Guard's roundout combat brigades (the 48th Infantry, 155th Armored, and 256th Mechanized Infantry) has become a contentious issue in the aftermath of the war. The units were mobilized late and were sent to stateside training ranges where they remained for the duration of the operation due to deficiencies in skills and equipment.³ On the other hand, Army Reserve combat support and service support units generally received high marks for their readiness. The fact that reserves were called from virtually every state contributed to the public support that was essential to the successful conduct of the war. It also showed that U.S. security interests can be met at reduced costs by effectively integrating active and reserve forces.⁴ The most significant problems were a lack of depth in unit availability to support long-term mobilization and rotation,⁵ and personnel mismanagement of manpower fillers, particularly Individual Ready Reserve (IRR) replacements.⁶

Any reorganization of the military force structure will encounter trials and tribulations. The "Army of Excellence" concept, which was to produce a smaller more efficient Army, never met expectations. Indeed, at the onset of the Persian Gulf War, none of the Guard's five infantry divisions had been converted to the AOE designs and none were structured to fight under the Army's AirLand Battle doctrine. The result is retention of obsolete equipment, dual staffed support elements, and personnel inefficiencies.⁷

The reduction from a 5-Corps 27-Division Army 86 to the anticipated 4-Corps 20-Division Army of the mid-90s will require significant reorganization. The

²Ibid.

³"All-volunteer tour de force raises new issues," *Army Times*, March 18, 1991, p. 6. See also various articles and commentary in *Army Times* issues of February 4, 18 and 25, 1991.

⁴"Defense Budget and Program Issues Facing the 102d Congress," Statement of Charles A. Bowsher, Comptroller General of the United States, GAO Testimony T-NSIAD-91-21, April 25, 1991.

⁵"Interim Report on Lessons Learned from RT-12 Call Up," Center for Army Lessons Learned, Fort Leavenworth, KS, Feb 15, 1991.

⁶"Operation Desert Shield: Problems Encountered by Activated Reservists," General Accounting Office Report 91-290, October 1991.

⁷"Lessons to Apply in Structuring Tomorrow's Army," GAO Report NSIAD-91-3, November 1990, pp. 34-35.

reduction in the active forces from 18 to 10 divisions would require an additional division be added to the reserve forces. Other support elements, necessary to sustain U.S. Forces in Europe will no longer be required in CONUS, but may be necessary for overseas deployment during conflict. Desert Storm also highlighted the requirement of significant reserve forces to sustain military and dependent support operations at stateside military bases when active forces are deployed.

Table 1 illustrates the current contribution of the Guard and Reserves by selected unit types to the Army's total force structure. The lessons learned from the Persian Gulf War and the current restructuring of the active army will likely bring significant structural changes to Army Reserve units.

Table 1. Reserve Component Contribution (in percent) to Total Army by Type of Unit, Fiscal 1990

Unit Type	ARNG	USAR	Active
Training Divisions	0	100	0
Railroad	0	100	0
Judge Advocate General	2	98	0
Civil Affairs	0	97	3
Chemical Smoke	12	72	16
Psychological Ops	0	68	32
Hospitals	16	59	25
POL	16	56	28
Field Artillery Bn	45	8	47
Infantry Bns (Std)	90	6	4
Aviation Attack	39	4	57
Armored Bn	48	2	50
TOW Light Anti-tank Infantry Bn	100	0	0
Combat Divisions	36	0	64

Source: Chief, Army Reserve

In the past, such reorganizations were not readily achieved since reclassification and retraining is difficult in the reserve environment. The Reserve Forces Policy Board reported in 1984 that introducing more modern weapon systems into the reserve components resulted in lower readiness. During the same period, the

National Naval Reserve Policy Board examined the instability caused by changes in Navy mobilization requirements and noted that personnel reassignments, unit redesignations, relocations, and the disestablishment of units and creation of new units resulted in 10,000 to 15,000 personnel actions per month.⁸ USAREC must be particularly sensitive and responsive to changes in force structure since MOS-specific vacancies, unit locationing, and reserve accessions and attrition are all affected.

For example, with the reduction of Active armor units, equipment and facilities to train reserve and guard new recruits and current unit members on the M1A1 Abrams tank may be inadequate. Current proposals include "stockpiling" the M1A1 at overseas locations or selling them to other nations, while reserve units continue to train with the obsolete M-60 tank. In addition, active force downsizing could reduce requirements for reserve training divisions. It is not unreasonable to predict the 84th and 85th Training Divisions, located in Wisconsin and Illinois, will be consolidated into one division and possibly relocated closer to Fort Hood, the site of the largest Regular Army armor unit.⁹ Likewise, with the closure of Fort Ord, California, the 91st Training Division (Infantry) could be deactivated.

The reorganization of the military continues to place emphasis on retaining maximum combat capabilities in the Active components. The result is that Army planners may be forced to shift support missions to reserve forces increasing reserve end strength.

B. ARMY RESERVE RECRUITING

The internal pressures on reserve readiness create additional burdens on USAR recruiters, who must compete with the active forces, civilian employers and higher education. The Army Reserve has traditionally had a difficult time overcoming this hurdle.¹⁰ During the early 1970's, Army Reserve recruiting was underfunded and accomplished primarily by civilian GS-7s assigned to major USAR commands. In 1976, the civilian technicians were augmented by Reserve non-commissioned officers on short "training" tours lasting generally 179 days. In July

⁸"Opportunities to Improve National Guard and Reserve Policies and Programs," GAO Report NSIAD 89-27, pp. 56-57.

⁹Swibies, Gerald M., "A Preliminary Analysis of the Force Location of USAR Training Organizations," USAREC SR 88-1, February 1988.

¹⁰During a recent House Armed Services Congressional hearing (July 9, 1991), recruiters testified that positive support by older Americans for Operation Desert Storm military actions was not followed by endorsements for their sons to join. The attitude seemed to be: "Let someone else take the risk."

1977, the number of reserve recruiters on active duty was expanded to over 1,000.¹¹ However, the recruiting activities lacked coordinated planning, advertising support, and specific goals. Reserve recruiters from different commands often competed with each other in identical markets, causing a duplication of effort.

In August 1978, the Vice Chief of Staff decided to make Army Reserve recruiting a responsibility of the U.S. Army Recruiting Command. This transition of the recruiting mission was completed in May, 1979. Meanwhile, the advertising budget in support of recruiting grew from \$ 2 million in 1972 to \$ 11.1 million in 1979.¹²

Today, USAREC retains responsibility for the Army Reserve's recruiting mission. Army Reserve recruiters and active Army recruiters share space in recruiting stations and have similar incentive programs for high production and shared management structures. However, Army Reserve volunteer recruiters are not guaranteed active duty after selection and training, and tours are initially limited to 3-years. Under these conditions, it is difficult to convince the highest quality reservists to jeopardize their civilian employment to volunteer for recruiting duty.

C. ARMY RESERVE COMMAND

Perhaps nothing more clearly expresses the future of the USAR than the recent addition of a third star to the rank insignia of the Sergeant Major of the Army. This symbolism represents a recognition of three distinct components — Active, Guard and Reserve — within the Total Army. The Defense Authorization Act of 1990 created a new command structure for the Army Reserve. In addition to the current responsibilities as Chief of the Army Reserve (OCAR), a new three-star general officer position has been designated as Forces Command Deputy Commanding General and Commander of the USAR Command (USARC). The Chief of the Army Reserve, in addition to serving as the principal Department of the Army staff adviser on the Army Reserve, will also gain control of the USAR budget process from the Commanding General of the U.S. Forces Command. As a Major Subordinate Command of Forces Command, the same individual will ultimately command all USAR units assigned to Forces Command and manpower, readiness, mobilization,

¹¹Crossland, Richard B. and Currie, James T., *Twice the Citizen: A History of the United States Army Reserve, 1908-1983* (Washington D.C.: Office of the Chief, Army Reserve, 1984) p. 234.

¹²*Ibid.*, p 235.

force structure and locationing.¹³ The provisional USARC was established for a test period of 2 years. It is widely believed this dual-role will not be sustained and that by 1994 the USARC and OCAR will merge as a separate command parallel to the current Army National Guard Bureau.

This reorganization also anticipates elimination of the Continental Army (CONUSA) command structure. Major U.S. Army Commands (MUSARC) will report directly to the Command, USARC, and CONUSA responsibility will be reduced to readiness and training assistance. This is consistent with the command structure of the Army National Guard.

Project Vanguard, a special study group which looked at reshaping military forces to meet Army needs and resources in the future, has concurred with concepts to provide reserve components a greater role in planning for mobilization and to streamline the chain of command.¹⁴ Significantly, the Army will continue to rely extensively on the reserve components to reinforce extended contingency operations, to deal concurrently with a second major contingency, and to hedge against a resurgent and hostile Soviet Union or other large-scale threats to U.S. security.

D. DESERT SHIELD AND DESERT STORM

Perhaps nothing highlights more dramatically the success and failure of current reserve component strategic planning than the recent mobilization of nearly 200,000 Army Reservists and Guardsmen for the Persian Gulf. Analysts will study and debate the results for years but several key issues have been identified. Some structural changes to the force mix need to be reconsidered in view of Desert Storm; for example, some reserve units that were deployed to Saudi Arabia had actually been slated for elimination or conversion.¹⁵ Shortage of depth of critical unit types also emerged during the deployment. The Secretary of Defense's proposal for a six-month rotation (in January 1991) created a crisis in operations and logistics. There was insufficient availability of some reserve unit types, such a chemical and water purification, to provide even a first rotation. Furthermore, it was questionable if public law authorized re-mobilizing deactivated personnel. Other units, most notably

¹³"Trained and Ready: The United States Army Posture Statement FY 92/93," Department of the Army, February 1991, p. 51.

¹⁴"Trained and Ready, The United States Army Posture Statement FY 92/93," Department of the Army, 15 February 1991.

¹⁵"Army Reserve Special Report 1991," Headquarters, Office Chief of the Army Reserve, p. 29

medical and aviation, had already utilized volunteers from non-mobilized units to backfill personnel shortages in mobilized units. The remaining units then experienced shortfalls of critical personnel for rotation mobilization. The problem was compounded when these "shell" units were later mobilized with critical personnel and equipment shortages.¹⁶

Congressional leaders have recognized that these problems have not been addressed and have, as a result, delayed implementation of the downsizing recommended by the Department of Army. Congressional leaders argue that across-the-board strength reductions have not been the result of conscientious strategic planning, which has been requested from the Army leadership.

Desert Storm demonstrated that high-tech combat units cannot be easily mobilized, trained and deployed. The experiences of the three Army National Guard Brigades illustrate the difficulty of maintaining qualified combat units and providing realistic multi-environment training. Also, active component units (Airborne and Light) appear capable of sustaining military action in the short term and, in the event of global conflict, it is possible that conscripts could be trained almost as quickly as reserve units could be "refresher" trained. The military expeditions in Grenada, Panama, and the Persian Gulf may lead to the conclusion that the number of reserve Infantry units can be reduced. On the other hand, the complexity and scarcity of modern Army weapons systems, such as the Abrams tank and Patriot missile, may well require a reserve force with extended annual training with their active counterparts.

It is likely that some National Guard combat units will be eliminated or reorganized and that Guard end-strength will decline. This process will be arduous, time consuming, and fraught with political difficulties.¹⁷ Reserve heavy divisions cost only two-thirds of what their active counterparts cost. Thus, by cutting three Guard heavy divisions, the Army could add two active divisions for the same costs. The configuration of these units as heavy, medium, or light will be a key issue as

¹⁶ "Total Force Policy takes a beating," *Army Times*, February 25, 1991, pp. 12-13.

¹⁷ The Secretary of Defense has indicated that "reserve combat units no longer will be considered an integral part of U.S. contingency forces." (*Wall Street Journal*, 5 April 1992, p. A16). However, during the Governor's Economic Summit (August, 1991) strong opposition was experienced to any cuts in Guard personnel strength levels.

tradeoffs between weapons, support structure, and sealift/airlift requirements are developed in future defense plans.¹⁸

Desert Storm conclusively demonstrated the ability of many Army Reserve support and service support units to quickly mobilize and deploy. As a result, we might expect an increase in the number of these types of units in the reserve force structure. As the active force retains more of the combat "muscle" of the total force, Army Reserve support and service support units may actually experience an increase in end-strength and recruiting requirements.

¹⁸Lt. Gen. William E. Odom, "A Close-Run Thing," *National Interest*, Summer 1991, pp. 98-102.

III. SOCIAL AND DEMOGRAPHIC TRENDS

A. THE CHANGING DEMOGRAPHICS

Reserve recruiting is sensitive to both the age distribution of the population and its geographic location. Due to migration, regional economic changes, immigration from abroad, and differential population growth, the age and geographic distribution of the population have changed rapidly in recent decades. The prospect is that such changes will continue in the future.

During the 1970s total population growth was largest, in absolute terms, in the South, followed by the West (Table 2). In percentage terms, however, the West increased in population by nearly 24 percent from 1970 to 1980, whereas the South increased by almost 20 percent. Population growth in the Midwest was only 4.0 percent, and the population of the Northeast remained nearly constant over the decade. Based on preliminary figures from the 1990 census, the West's population grew by 22.7 percent during the 1980s, followed by the South at 13.9 percent. The Northeast grew by 3.7 percent and the Midwest by 1.7 percent (Table 2).

Table 2. Population of the United States and Census Regions, 1970, 1980, 1990 (thousands)

Region	1990	1980	1970	Change 1980-1990	Change 1970-1980
United States	248,710	226,546	203,302	22,164	23,244
Northeast	50,809	49,135	49,061	1,674	75
Midwest	59,669	58,866	56,590	1,803	2,275
South	85,446	75,372	62,812	10,074	12,559
West	52,786	43,172	34,838	9,614	8,334

Source: U.S. Bureau of the Census, *Statistical Abstract of the United States: 1987* (107th edition). Washington, DC, 1986, Table No. 24, for 1970 and 1980 data, and "1990 Census Profile," for 1990 data.

The major component of regional population shifts is accounted for by migration. Migration to the South and West has been from two sources — net internal migration and immigration. Within the U.S. internal migration is a zero-sum game. Thus, migrants gained by one region must be lost by another. Table 3 more clearly identifies the direction and magnitude of internal migration in the United States, including both the reversal of southern net out-migration and the

increased net migration out of the Northeast and Midwest. Not shown in the table is the fact that prior to the turnaround the South experienced persistent net out-migration. For example, for 14 of the 16 years between 1953 and 1968 migration was out of the South. In 8 of these 16 years, this region lost over 200,000 net migrants and in one year alone lost over 400,000. Although the South experienced some net in-migration between 1965 and 1970, the volume nearly tripled during each of the following five-year periods. Hence, net in-migration to the South now seems firmly established.

Table 3. In-Migration, Out-Migration, and Net-Migration for Regions:
1955-60, 1965-70, 1970-75, 1975-80 and 1980-85
(of persons 5 and over in thousands)

Region	1955-60	1965-70	1970-75	1975-80	1980-85
Northeast					
In-Migrants	1,044	1,273	1,057	1,106	1,218
Out-Migrants	1,683	1,988	2,399	2,592	2,240
Net-Migrants	-639	-715	-1,342	-1,486	-1,022
Midwest					
In-Migrants	1,702	2,024	1,731	1,993	1,901
Out-Migrants	2,545	2,661	2,926	3,166	3,426
Net-Migrants	-842	-637	-1,195	-1,173	-1,525
South					
In-Migrants	2,490	3,142	4,082	4,204	4,428
Out-Migrants	2,435	2,486	2,253	2,440	2,530
Net-Migrants	+56	+656	+1,829	+1,764	+1,898
West					
In-Migrants	2,488	2,309	2,347	2,838	2,641
Out-Migrants	1,062	1,613	1,639	1,945	1,992
Net-Migrants	+1,426	+696	+708	+893	+649

Source: U.S. Bureau of the Census, *Current Population Reports*, Series P-20, No. 420, "Geographical Mobility: 1985," (Washington, DC: U.S. Government Printing Office, 1987).

The most recent annual migration data are presented in Table 4. During the last five years of the 1980s, for which data are available, the Northeast and Midwest continued to experience a net loss of migrants to other regions. The South and West had net gains in every year. The only exception to this pattern was the West, which experienced a net loss of migrants during the 1983-84 period.

Table 4. Annual In-Migration, Out-Migration and Net-Migration for Regions: 1982-1987 (in thousands)

Region	1982-83	1983-84	1984-85	1985-86	1986-87
Northeast					
In-Migrants	439	487	482	502	398
Out-Migrants	625	578	691	752	732
Net-Migrants	-186	-91	-209	-250	-334
Midwest					
In-Migrants	661	820	842	1,011	858
Out-Migrants	947	1,102	1,053	996	969
Net-Migrants	-286	-282	-211	+15	-111
South					
In-Migrants	1,211	1,399	1,329	1,355	1,374
Out-Migrants	973	973	1,169	1,320	1,095
Net-Migrants	+238	+426	+160	+35	+279
West					
In-Migrants	880	834	994	910	916
Out-Migrants	645	887	734	710	750
Net-Migrants	+235	-53	+260	+200	+166

Source: U.S. Bureau of the Census, *Current Population Reports, Series P-20, No. 430, "Geographical Mobility: March 1986 to March 1986,"* (Washington, DC: U.S. Government Printing Office, 1987)

During the 1970s the South gained about two new migrants for every one gained by the West; during the 1980s this ratio rose to three to one. New out-migration from the Northeast and Midwest nearly doubled between the late 1960s and both the early and the late 1970s. This increased net out-migration reflects the weak employment performance of these regions during the 1970s; the feedback effects of the net out-migration further reduced their employment.

One important trend that bears watching is that the propensity to make an interstate move appears to have declined in recent years. For example, the propensity to make an annual interstate move fell from an average of 3.47 percent between 1965-66 to 1970-71 to 2.97 percent in 1975-76 and then to 2.80 percent in 1980-81. The propensity of young persons to migrate between states fell even more dramatically. For persons 20 to 24 years of age, this propensity fell from 9.38 percent in 1965-66 to 8.77 percent in 1970-71; it then fell from 6.83 percent in 1975-76 to 5.80 percent in 1980-81. Thus, the 1980-81 figure for this relatively highly mobile age group was only about two-thirds as high as the 1970-71 figure.

When moves of all types are considered, the data reveal that the overall mobility of the population is in fact decreasing. Through the decades of the 50s and 60s, about 20 percent of the population made a move of some type each year. By 1982, the rate fell to a low of 16.6 percent. Although mobility briefly reached 20 percent again in 1985, since then it has remained below 20 percent. The reduction in mobility has occurred for moves over shorter distances (within counties) and over longer distances (between states), while movement over intermediate distances (between counties within a state) has remained steady. Demographers have not been able to fully explain this overall decline in mobility. Aging of the baby boom appears to be a factor, but other factors are also at work. Nonetheless, this drop in mobility, especially of the youth population, and the contributing factors may have important implications for future recruiting.

Reserve recruiting is most sensitive to the youth population and its regional distribution. Table 5 shows the population in the 18–24 age group (numbers and percentages) for each major region between 1980 and 1990. Even though the total number of 18–24 year olds declined, the share of this age group residing in the South and West increased from 53 percent in 1980 to 56 percent in 1990.

Table 5. Population of 18–24 Year Olds by Region

Region	Thousands			Percent Distribution		
	1970	1980	1990	1970	1980	1990
Northeast	5,360	6,163	5,123	22.6%	20.5%	19.7%
Midwest	6,444	7,872	6,112	27.2	26.2	23.6
South	7,634	10,066	9,248	32.2	33.5	35.7
West	4,278	5,921	5,415	18.0	19.7	20.9
Total	23,697	30,022	25,897	100.0	100.0	100.0

Source: U.S. Census Bureau, *Statistical Abstract of the United States: 1990*. Washington, DC, 1989.

Table 6 shows the projected population of 18 to 24 year old males by region. During the first half of the decade, all regions are expected to experience decreases in this age group. The effects of the “birth dearth” will end in the second half of the 1990s and small increases will occur in all regions. However, these changes during the 1990s will not be of the same magnitude in all regions. Between 1990 and 1995 the Northeast and Midwest will experience decreases of over 20 percent in the size of the youth age group, whereas the South and West will see much smaller declines. While only negligible increases will occur in the Northeast and Midwest between

1995 and 2000, the South and West will see a four and nine percent increase, respectively, in their male youth populations. Between 2000 and 2005 all regions will experience gains in the youth population, but between 2005 and 2010 this trend will reverse and all regions will experience a slow growth rate in this age group.

Table 6. Projected Population of 18 to 24 Year Old Males (thousands)

Region	1995		2000		2005		2010	
	Number	Growth (%) ^a	Number	Growth (%)	Number	Growth (%)	Number	Growth (%)
Northeast	2,157	-.24	2,163	.002	2,321	.07	2,346	.01
Midwest	2,711	-.20	2,746	.01	2,821	.03	2,818	.001
South	4,485	-.08	4,675	.04	5,005	.07	5,076	.01
West	5,305	-.03	5,806	.09	6,391	.10	6,452	.01

Notes: ^aGrowth rate in 1995 computed using 1986 as basis.

Source: U.S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 1053, "Projections of the Population of States by Age, Sex, and Race: 1989 to 2010," (Washington, DC: U.S. Government Printing Office, 1990).

Five states have experienced population growth rates of at least 10 percent since the mid-1980s. From 1985 to 1990, Nevada grew by 18 percent, followed by Arizona (12 percent), Florida and New Hampshire (11 percent) and California (10 percent). In comparison, the national growth rate was only 4 percent.¹⁹

The 1990 census produced 33 new concentrations of 50,000 or more people, known as 'urbanized areas.' All but five of the newly designated UAs are located in the South and West. The 396 total urbanized areas (UAs) defined for the 1990 census contain 158.3 million people, or 63.6 percent of the total population, compared with only 139.2 million or 61.4 percent in 1980.²⁰ Perhaps more important, 90 percent of the nation's population growth took place in metropolitan areas.

The Bureau of Economic Analysis (BEA) of the U.S. Bureau of the Census projects population, personal income, and employment to the year 2000 and beyond for 319 metropolitan areas. The projections indicate that metropolitan areas in the South and West will experience the fastest population growth. Table 7 shows the metropolitan statistical areas with the most rapid projected annual population growth rates during the 1990s.

¹⁹*Census and You*, Volume 25, No. 3, March 1990.

²⁰"New Urbanized Areas List Released," *Census and You*, Volume 26, No. 9, September 1991.

metropolitan statistical areas with the most rapid projected annual population growth rates during the 1990s.

Table 7. Metropolitan Areas (MSA) With Most Rapid Annual Growth Rates, 1988-2000 (in percent)

MSA	Annual Growth Rate
Naples, FL	2.9
Las Vegas, NV	2.4
Ft. Pierce, FL	2.2
Ocala, FL	2.1
Ft. Myers, FL	2.0
Reno, NV	2.0
W. Palm Beach, FL	1.9
Riverside, CA	1.8
Phoenix, AZ	1.8
Sacramento, CA	1.7
San Diego, CA	1.7
Orlando, FL	1.7

Source: "Metropolitan Statistical Area Projections of Income, Employment, and Population to the Year 2000," *Survey of Current Business*, Vol. 70, October 1990.

Changes in population growth rates and distribution are crucial to recruiting for the reserves. Reserve units must be filled by the population in the local market, generally defined as the area within a 50-mile radius of a reserve center. Thus, support for the manpower requirements of local units depends on the local population pool.²¹ If reserve units fail to relocate as the population shifts, recruiting will find it difficult to maintain strength requirements in areas of slow growth and out-migration, especially given the overall decline in the military-aged population.

²¹Regional trends in population, migration, and economic activity and the implications for active and reserve recruiting are discussed more fully in Michael J. Greenwood and Stephen L. Mehay, "Trends in Regional Patterns of Migration, Immigration, and Economic Activity: Implications for Army Recruiting," *Technical Report NPS-AS-91-015*, Naval Postgraduate School, Monterey, CA, 1991.

B. CHANGES IN THE COMPOSITION OF THE POPULATION

Historically, racial and ethnic minorities and women have not been distributed equally among military occupations. As illustrated in Table 8, a recent study established that ethnic and racial minorities and women were over-represented in several Army career management fields, including administration, supply, petroleum and water, and food service.²² While it can be argued that this distribution is a measure of aptitude²³ or attitude,²⁴ its existence is of considerable importance in the stationing of certain types of reserve units and maintaining their strength. More research is needed to fully understand the relationships between reserve membership, unit types, and recruiting.

Table 8. Representation of Minorities and Females in Selected Army Career Management Fields (CMF) (in percent of force)

Field	Regular Army		Army Reserve	
	Minority	Female	Minority	Female
Army (total)	31.3	14.7	38.5	20.1
Administration	55.4	50.3	47.2	49.2
Supply	54.0	33.6	52.2	44.0
Petroleum and Water	48.5	32.4	—	—
Food Service	51.9	30.4	42.88	42.9

Source: USAREC mini-master files, 1990. USAR SIDPERS data, 1991.

Minorities currently constitute nearly 39 percent of the USAR membership compared with 28 percent of the U.S. population. During the next twenty years, the share of minorities in the total population is projected to increase to 35 percent. An important aspect of this change is the distribution of minorities in the key growth states and urban population centers. Table 9 illustrates the regional distribution of the population by race for 1990.

²²Galing, Steven E., *Over-representation in the U.S. Army of Minorities and Women in Career Management Fields 71, 76, 77, and 94*, U.S. Army Recruiting Command, USAREC SR 91-3, May 1991, p. 28.

²³For a discussion of qualification by aptitude standards see Mark Eitelberg, *Manpower for Military Occupations*, Office of the Assistance Secretary of Defense, April 1988.

²⁴For discussion see Charles C. Moskos, *A Call to Civic Service*, (New York: Free Press, 1988).

Table 9. Percent Distribution of Resident Population by Race and Hispanic Origin, for the U.S. and Regions: 1990

<u>Region</u>	<u>White</u>	<u>Black</u>	<u>Hispanic</u>	<u>Asian</u>	<u>Other</u>
United States	72.2	11.2	9.0	2.9	4.7
Northwest	76.1	10.3	7.4	2.6	3.6
Midwest	84.6	9.3	2.9	1.3	1.9
South	69.7	17.7	7.9	1.3	3.4
West	58.6	3.5	19.1	7.7	11.1

Source: Census Bureau Press Release CB91-100, March 11, 1991.

Table 10 presents the distribution of minority groups in the ten states with the highest growth rates during the 1980s. These states currently represent nearly 40 percent of the U.S. population and represented over 50 percent of the growth during the 1980s. Based on migration and the higher birthrates of Blacks and Hispanics, the minority population share in three key states — New York, Texas and California — is projected to exceed 50 percent by the year 2000.

Although Hispanics represent the fastest growing segment within the growth states (Florida, Texas and California), they are generally under-represented in the Army Reserve. This may be a result of opportunity, as much as propensity, because proportionally fewer reserve units are located in areas of high Hispanic population. Army manpower planners must be mindful of the potential importance of Hispanics in future markets.

Prior research has demonstrated that the racial distribution of soldiers by race is unequal across military occupational specialties. Reserve recruiting must be particularly sensitive to this issue since the local population is the primary source of reserve membership. The tables above suggest that specific reserve units are unlikely to be "representative" of the national population. Such representation is not possible when local minority population percentages do not reflect national percentages.²⁵ It is important to identify the types of units/occupation specialties in which minorities are most likely to enlist. Gender, racial and ethnic factors should

²⁵Eitelberg, Mark J., "Military Representation, Reflections and Random Observations," A paper presented at the Biennial Conference of the Inter-University Seminar on Armed Forces and Society, Baltimore, MD., October, 1989, p. 3, 16.

be considered in local reserve recruiting missions, unit stationing, and force structure/manpower decisions.

Table 10. Percent Distribution and Growth of Population by Race and Hispanic Origin, for Certain States: 1990

State	% Change 1980-90	Percent Distribution				
		White	Black	Hispanics	Asian	Other
Nevada	50.38	74.9	5.6	10.4	3.2	5.9
Arizona	34.86	71.9	1.5	18.8	1.5	6.3
Florida	32.82	72.1	12.4	12.2	1.2	2.1
California	25.74	56.8	5.8	25.8	9.6	2.0
New Hampshire	20.49	97.2	0.5	1.0	0.8	0.5
Texas	19.38	59.4	10.1	25.5	1.9	3.1
Georgia	18.56	69.4	26.8	1.7	1.2	0.9
Utah	17.92	88.7	0.5	4.9	1.9	4.0
Washington	17.83	84.5	2.7	4.4	4.3	4.1
New Mexico	16.55	50.0	1.5	38.2	0.9	9.4

Source: Census Bureau Press Release CB91-100

C. EDUCATION AND YOUTH QUALITY

Trends in education affect the reserve recruiting market in several ways. First, trends in educational standards affect the quality of the pool of recruitable youth. Educational standards are affected by such factors as high school drop-out and graduation rates, acquisition of a GED (General Education Development Certificate), and scores on standardized tests. Second, the size of the recruitable non-prior service market is generally reduced by the college enrollment rate.

With respect to the first factor, the trends are somewhat discouraging. Table 11 indicates a falling high school graduation rate and an increase in the proportion of youth who receive the GED, which is not considered equivalent to a "high school diploma" for enlistment purposes. As Table 10 illustrates, the percent of population graduating from high school has declined. Furthermore, the percent of students receiving alternative education credentials, such as the GED, increased from 6 percent of the graduate population in 1975 to over 9 percent in 1990. Surprisingly, the same statistics show a decline in drop-out rates from 17 percent in 1970 to 11.9

Table 11. High School Graduates and GED rates from 1970 to 1995 (in thousands)

Year	Population of 17-Year Olds	Number of High School Graduates	Grads as Percent of Population	GEDs Issued 17-24 olds	Graduates w/GED (percent)
1970	3,757	2,889	76.9	N/A	NA
1975	4,272	3,148	73.7	201	6.0
1980	4,207	3,020	71.8	286	8.6
1985	3,691	2,642	71.5	251	3.7
1990	3,375	2,475	71.2	248	9.1
1995	3,501	2,393	68.4	NA	NA

Source: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics*, September 1990 and *Projections of Education Statistics*, September 1990

percent in 1990, a decline which occurs across all race and gender spectrums.²⁶ It the same statistics show a decline in drop-out rates from 17 percent in 1970 to 11.9 percent in 1990, a decline which occurs across all race and gender spectrums.²⁷ It appears that more young people are being disenfranchised from the education system and not completing secondary education; thus, fewer graduate but the official dropout rate of those enrolled declines. If the trend in lower numbers of high school diploma graduates and the number of recruitable youth continues, either recruiting standards or accessions will fall. For the active force, the downsizing will reduce accessions automatically and will allow continued recruiting of the highest quality. For the reserves, however, the prospect of continued high accession requirements, and an historically high attrition rate, could point to future recruiting difficulties.

The implications for the quality recruiting (high school graduate) and "college bound" market are clear.²⁸ While the trend is slowing, it is not anticipated that high school diploma rates will rise in the near future. Moreover, the growth in GED

²⁶Ibid., p. 99.

²⁷Ibid., p. 99.

²⁸For a comprehensive discussion of the relationship of family unit, race, and income to educational achievements, see *Digest of Education Statistics 1990* and *Youth Indicators 1988: Trends in the Well-Being of American Youth*, U.S. Department of Education, National Center for Education Statistics, Washington D.C.

recipients shows no signs of slackening.²⁹ If these trends continue, the qualified recruitable youth population may decline well into the 21st century.

An unparalleled expansion in the number of students attending and graduating from college took place between 1981 and 1987. During this period, the number of college graduates in the labor force aged 25 to 34 grew by a staggering 268 percent. In comparison, the labor force grew by only 56 percent.³⁰ College graduates now constitute approximately 25 percent of everyone in the work force between the ages of 25 and 64. This fraction is double what it was in the 1960s and is higher than in any other major industrialized nation.

Educational attainment of the labor force has increased across the board. For example, the proportion of the labor force with one to three years of college also doubled over this period and now stands at 20 percent. Furthermore, the proportion of adult workers who completed high school (but did not attend college) increased from 35 to 40 percent. On the other hand, the proportion of the adult labor force consisting of non-high school graduates has dropped dramatically, from 41 percent to only 15 percent today. A major issue is how these changes in educational attainment affect the civilian youth labor market and how this, in turn, may affect military recruiting in the coming years.

One would expect the labor market to have adjusted to these increases in the supply of college-trained workers by reducing their wages relative to the wages of high school graduates. But, in fact, just the opposite occurred. A recent study analyzed pay trends for full-time, year-round workers and found that average real (in constant dollars) weekly earnings of male high school graduates (18 to 25 years old) fell 19 percent between 1976 and 1987.³¹ In contrast, real weekly earnings of college graduates rose by 4 percent.

These two trends widened the already substantial pay gap between these groups. However, viewed over a longer period, the payoff to a college degree displays a roller-coaster pattern. The ratio of annual earnings of male college graduates to

²⁹For example, U.S. Department of Education statistics show the number of high school graduates declined from 73 percent in 1975 to 71 percent in 1985. Included in graduates are GED certificate awardees which increased 150 percent in the same time period.

³⁰Wayne J. Howe, "Education and Demographics: How Do They Affect Unemployment Rates?" *Monthly Labor Review*, vol. 111, January 1988: 3-8.

³¹P. Kostiuk, "Geographic Variations in Recruiting Market Conditions: 1976-1987," Center for Naval Analyses, 1989. For further evidence on changes in the relative earnings of college and non-college graduates see M. Blackburn, et al., "The Declining Economic Position of Less Skilled American Men," in G. Burtless (editor) *A Future of Lousy Jobs?* Brookings, 1990.

male high school graduates — the “college premium” — fell sharply during the 1970s, but staged a remarkable comeback during the 1980s. From 1978 to 1987 for young male workers (ages 25–34) the college premium jumped 15.5 percent, and now stands at an all-time high.³² A second measure of the payoff to college is the rate of return (over an individual’s lifetime) on the costs (direct and indirect) of attending college for four years. A recent estimate puts the internal rate of return to college in 1987 at 13–15 percent, nearly double what it was in 1978 (7–8 percent). The net payoff to college increased even in the face of soaring tuition costs in the 1980s.

What accounts for the failure of the real wages of college-educated workers to drop during the 1980s in the face of a ballooning supply of new graduates? The answer appears to lie in a steadily rising demand for college graduates by employers who no longer trust the high school diploma as a measure of individual ability. Indeed, as public secondary schools have come under attack for a decline in quality, the high school diploma may have lost its value to employers as a “screening” device. The college degree may have become the new device for conveying information to employers on necessary work attributes: discipline, maturity, and the ability to learn on the job. Thus, employer demand for college-educated workers has continued to grow while the demand for those with high school diploma has slumped.

It appears that many employers have begun to substitute college degree holders in jobs formerly occupied by high school graduates. The effects of this substitution process on high school graduates have been pronounced. Not only have real wages dropped overall, but fewer good jobs are now available to high school graduates. To further compound these problems, high school graduates accounted for two-thirds of the increase in the national unemployment rate between 1967 and 1987, and they have likewise experienced an above-average rise in unemployment. In contrast, college graduates were responsible for only eight percent of the increase in national unemployment over this period.

Perhaps one of the most notable effects of these changes in educational attainment and shifts in employer demands is to dispel the notion of a nationwide skills shortage. There is little evidence that such shortages currently exist, except in spot professions, and there is even less evidence that such shortages will be a serious problem in the future. The Department of Labor reports that the supply of college graduates exceeds the demand for their skills. One study estimated that the current

³²John M. Santos, “The Fall and Rise Again in the Monetary Rewards to College Education,” presentation at the Western Economic Association Annual Meetings, Seattle, July 3, 1991.

pool of college graduates exceeds by 15 percent the demand for their skills in professions that normally require college training, such as accounting, law, and medicine.

Military recruitment has benefited from these trends in a number of ways. The most important benefit is associated with the fall in the opportunities for those high school graduates with no further formal education. Indeed, as we look back on the mid- to late-1980s, it is not surprising that the military services were able to attract record numbers of high-quality recruits. To those with only a high school diploma the military has become a desirable alternative to working in the civilian sector; it not only offers immediate employment and relatively good pay, but also training for future jobs.

Whether the upward trend in college enrollments will persist throughout the 1990s is an open question. On the one hand, it is difficult to expect that increases in demand for college graduates will continue to out-pace the rapid surges in supply. The Department of Labor forecasts that the number of college graduates entering the labor force through the year 2000 will exceed the number of job openings that require a college degree by about 100,000 per year (or, about 6 percent of all openings.)³³ Some observers expect a return to the early 1970s when a sharp decline in the economic payoff to a college education occurred.

On the other hand, there are indicators that demand may keep pace with supply increases. The Bureau of Labor Statistics projects that the primary college-age (18-24) population will continue to decline throughout most of the 1990s, and that demand for college-educated labor will grow at a steady pace. The BLS also forecasts that a high proportion of net new employment opportunities will occur in "upper-tier" professional, technical, and managerial occupations that require college degrees. In addition, the historic high economic returns to college in the late 1980s will continue to spur college enrollments for some time. Indeed, recent data confirm that enrollments in 1990 registered the largest annual increase in a decade. Thus, the evidence seems to suggest that college enrollment rates will remain high for much of this decade.

These higher college attendance rates reduce the Army's primary market, because college-goers in each geographic area are subtracted from the estimated military available population. But, it is clear that this method overestimates the extent to which college-goers actually reduce the prime market because many

³³Jon Sargent, "A Greatly Improved Outlook for College Graduates: A 1988 Update to the Year 2000," *Occupational Outlook Quarterly*, Summer 1988.

college-goers drop out of school. Those who leave college for financial reasons are particularly good candidates for Army educational incentives, especially the loan repayment program. Second, college attendance statistics include those at two-year community colleges, who may be better recruiting targets than those attending four-year schools. Finally, if the predicted surplus of college graduates continues, and the real rate of return drops as some have predicted, college graduates themselves may become a focal point for enlistment campaigns.

It is clear that changes in educational attainment are changing the primary market for military recruiting. The traditional segment of the market — male high school graduates with no further education — is shrinking and being replaced by individuals with some college background. These trends pose challenges to recruiters due to the direct competition for high school graduates in a declining youth pool. But, as the nature of the recruiting market evolves, significant opportunities will emerge. Army recruiting stands to gain from the overall changes in educational attainment due to: (a) poorer employment conditions for high school graduates, (b) falling real-wages for those with less than a college diploma, and (c) a growing market of potential recruits that include college drop-outs, junior college students, and some college graduates.

D. TRENDS IN FAMILY STRUCTURE³⁴

The number of married-couple family households continues to decline in the U.S. In March 1990, 26 percent of all households consisted of married-couple families with children under 18 years of age, compared to 31 percent in 1980 and 40 percent in 1970. Married-family households now represent less than half of all households.

About 17 percent of households were maintained by women alone in 1990, compared with 15 percent in 1980, and 11 percent in 1970. The annual rate of increase in the number of family households with female heads is slowing, but is still growing. Moreover, there are sharp differences among racial and ethnic groups: single women headed 13 percent of white families, 44 percent of black families, and 23 percent of Hispanic families in 1990.

³⁴Sources of data for this section are: U.S. Bureau of the Census, *Household and Family Characteristics: 1990 and 1989*, Current Population Report P-20, No. 447, March 1990; and *How We're Changing: Demographic State of the Nation: 1990*, Current Population Report P-23, No. 170, December 1990.

These trends may pose significant new issues for recruiters. For example, what are the values, outlook, and attitudes of children being raised in non-traditional families. In particular, do such children tend to have a higher or lower propensity for military service? Or is there any connection between the type of family household in which one is raised and propensity for the military?

The trend toward single-parent (female-dominated) is likely to pose a growing problem for the readiness (and mobilization) of reserve units. During the Persian Gulf mobilization, over 10 percent of the notified reservists sought deferments, 60 percent of which were based on dependency-related conflicts.³⁵ The trend toward female-dominated households may also reduce youth enlistment propensity. Recruiting-sponsored surveys of young people³⁶ indicate that nearly 40 percent of the young men surveyed, who had discussed Army service with their parent(s), felt their mother disapproved. How this sentiment will affect the propensity of young people coming of age for military enlistment, particularly in the Guard and Reserve, is an issue for future research.

E. GROWTH IN FAMILY AND EMPLOYER CONFLICTS

Family conflict represents a major factor affecting reservists' participation decisions. The reservist is no longer "reserve" in the conventional sense, but actually an augmentee who, upon mobilization, serves side-by-side with active component members. One consequence of this is that reservists are being required to devote unprecedented overtime — some compensated, some donated, all voluntary — to their unit. For many reservists, one cost of affiliation is the decrease in time available to spend with families or in leisure pursuits. One Louis Harris survey reported that between 1973 and 1987 the average American's free time had shrunk from 26.2 hours to 16.6 hours per week.³⁷ Surveys of reservists also show that one-half to three-quarters feel that insufficient time is spent with family.³⁸ Conflict between family roles and military duty is an on-going issue for the active components. Unlike the active forces, however, spouses within the reserve-civilian community have no

³⁵"Readiness issue likely to fuel feud over reserves," *Army Times*, February 25, 1991, p. 12.

³⁶*Youth Attitude Tracking Study II Report*, various issues. Defense Manpower Data Center, Survey and Market Analysis Division, Arlington, VA, 22209.

³⁷Keyes, Ralph, *Timelock*, New York, Harpercollins Publishers, 1991.

³⁸Grissmer, David W., et al, *Improving Reserve Compensation*, R-3707-FMP/RA (Rand, Santa Monica, CA) September 1989, pp 49-51

support network to offset some of the problems associated with military participation.

The inflexible work schedule of the reserve job, typically requiring one weekend per month and two weeks during the summer, makes the reservist vulnerable to conflicts between reserve obligations and civilian employment schedules. This is exacerbated by the vast majority of the American workforce receiving only a two-week annual vacation. Evidence from the 1986 *Reserve Components Survey* and the 1989-90 WESTAT Survey indicates that a considerable number of reservists face problems at work because of their reserve participation. Obtaining leave for training or for extra reserve duty is reported to be a fairly serious problem by one-quarter of all reservists. About 11 percent feel that their reserve status is detrimental to their chance of success or promotion on their current job. Finally, there appear to be some real monetary costs to reserve participation; about half report losing overtime opportunities and wages as a direct result of reserve participation.³⁹

This issue will become more acute as reservists are required to tighten training and education requirements for readiness and promotion eligibility. The likelihood of an increased reliance on non-prior service enlistees in the future will create additional training demands and create more acute conflict between reservists and their employers.

Employer support for the Guard and Reserve is more than just getting time off from work. While some types of units, such as administration or finance, require general work skills that are common in most communities (typist, data processing, bookkeeper), many other units need special support. Units such as fire fighters, aviation, railroad and linguist, require support from the local employer to maintain skills and even provide training facilities. The ability and willingness of local employers to become involved and provide this support must be a consideration in unit stationing decisions.⁴⁰

³⁹Marquis, M. Susan, Kirby, Sheila N., *Economic Factors in Reserve Attrition*, (Santa Monica, CA:RAND,), R-3686-RA, March 1989, p. 9.

⁴⁰In addition, oversaturation of a unit requirement, such as military police or medical, in one locale can lead to friction and training degradation when too many employees seek identical alternative work schedules (both weekends and AT/vacations) to fulfill both responsibilities. In a worse case scenario, mobilization could deprive a community of adequate public safety or health care. Careful planning between reserve recruiting and community and business leaders should be a requirement when developing unit mix, size and location strategies. The lessons learned during the mobilization for the Persian Gulf War should be incorporated into reserve strength supportability modeling from the standpoint of occupational requirements.

F. NEIGHBORHOOD DEMOGRAPHIC CYCLES

Many local communities are experiencing demographic cycles. Real estate investors, banks, school districts and even the U.S. Department of Housing and Urban Development recognize the concept of neighborhood "cycles" and the impact on facility requirements. Neighborhood cycles occur when the age and economic structure of a local neighborhood changes over time. Young families mature and finally become retirees who give way to young families again. Elementary schools give way to high schools, which are transformed into community centers. In the 30 or 40 years of a neighborhood cycle, the need for elementary schools often returns. The current revitalization of many downtown areas, the stagnation of close-in suburbs and the explosive growth of more distant suburbs illustrate this phenomenon.

Reserve centers are established as long-term facilities at fixed locations. Recruiting must respond to the changing manpower supply in the geographic vicinity of the center. Recruiting activities concentrate on the residential location of high school students. Long-term location planning often ignores the changing concepts of local neighborhoods which may have far-reaching effects on the way the reserves recruit for existing reserve units and select sites for future units. Neighborhood cycles may need to be integrated into existing long-term USAR planning models.

G. AGING OF RESERVISTS

Current 15-year projections of the enlisted experience mix in the Selected Reserve show increases in the number of reservists with more than 15 years of service. Indeed, Table 12 shows that the number of enlisted reservists reaching retirement eligibility (i.e., with 20 years of service) has increased from less than 4 percent in 1985 to over 12 percent in 1990. During the same period, the end strength of the Army Reserve increased by over 15,000 personnel, but the percentage of available enlisted positions in pay grade E-5 and above remained constant at about 42 percent. The result is that "career" reservists now comprise nearly 29 percent of all E-5 and above slots, compared to less than 10 percent of such positions as recently as 1985.

The trend toward a more senior force is the result of several factors. The transition to the All-Volunteer Force (which began in 1973) produced an increase in retention, so that a higher percentage of each entering cohort now reaches retirement.

Table 12. Army Reservists With Over 20 Years of Service and in Pay Grade E-5 and Above, 1985-1990 (in percentages)

YEAR	Percent of Members With Over 20 Years of Service	Percent of E-5 Positions in Total Inventory	Percent Over 20 in E-5 Above
1985	3.7	41.2	9.3
1986	4.3	39.6	10.8
1987	5.0	40.7	12.3
1988	6.5	42.0	15.4
1989	8.2	41.9	19.4
1990	12.2	42.4	28.8

Source: DMDC RCS, DD-RA(M)1147/1148 reports, selected years

These volunteer cohorts will begin reaching retirement eligibility in 1993.⁴¹ Also, the structure of the current retirement system encourages individuals to stay far beyond 20 years of service because pay is high for these years, and additional service means higher retirement pay. Finally, leaving the reserve means loss of income since reserve retirement pay does not start until age 60.

The impact of these changes is two-fold: first, it means higher costs for the reserve components since pay is tied to years of service and more individuals will be collecting retirement pay. Second, long-term career reservists occupy unit positions for longer periods of time, denying more recent enlistees promotion opportunities. Lack of promotion has consistently been listed as the number one reason for attrition of first-term reservists.⁴²

The projected reduction-in-force (RIF) of active duty soldiers will provide a significant flow of prior service personnel for several years. Many enlisted soldiers who leave active duty with more than six years of service will be attracted to the retirement benefits and income associated with reserve affiliation. This should lead to a recruiting boom through 1995 in the prior service market. But one consequence of this will be to reduce promotion opportunities for non-prior service enlistees and increase attrition among first termers. The higher attrition rates among non-prior service first termers will require enlistments among this group to increase to offset the expected attrition. However, once the steady-state active force level has been

⁴¹Grissmer, *Improving Reserve Compensation*, pp. 77-78

⁴²WESTAT Surveys of Reservists, 1989 and 1990.

reached in the mid-90s, the lower active duty stock will provide a lower flow of prior service accessions in the late 1990s.

H. SOCIOECONOMIC REPRESENTATIVENESS

The current models that analyze reserve recruiting and unit stationing attempt to quantify the military available population (between the ages of 17 and 29) within the geographic market of each unit or center. It appears, however, that a different focus may be needed. As previously discussed, certain military occupation specialties (MOSs) attract primarily minorities and women. In fact, the idea of a representative military — particularly within the local reserve unit — may not be achievable. Many Reserve units appear to be composed of individuals with similar interests, values and lifestyles. Certain types of units appear to attract (and retain) predominately certain types of individuals. In part, this may be because each unit recruits for specific occupational specialties. Thus, the number of recruiting-age youth in a given market may be an inadequate or unreliable indicator of the market potential of units located there. Research may be needed to identify the socioeconomic and demographic characteristics of reservists who successfully participate in given types of units in given market areas.

Rather than measuring reserve recruiting success as a “percent of market share” or “penetration” of market population, USAREC may need to develop mission expectations based on solid demographic enlistment projections. Market analysts can identify the propensity of population sub-groups and then, working closely with strength and location decision makers, translate this information into supportable force structure. Proper market segmentation, with a more careful analysis of the relationships between accessions, readiness and attrition will permit a better identification of the “quality” reservist in terms of long-term strength supportability. Marketing emphasis can then be given to identifying and developing “niche” markets based on the type and size of units.

I. RETENTION, RECRUITING, AND READINESS

The cost of recruiting reservists and training them to be MOS-qualified is likely to increase the future importance of retention policies. The management of reserve manpower is a key component in the development of an optimal force configuration. High levels of attrition contribute to increased recruiting requirements, higher manpower costs, and increased personnel management difficulties. Thus, it is essential that the determinants of reserve attrition be uncovered and the relationships

between these factors and observable accession patterns across geographic markets be established.

Little prior research has evaluated the long-term impact of attrition by accession source on Army National Guard and Reserve recruiting, readiness and training. Most existing research has concentrated on short-term attrition factors.⁴³ This is consistent with the Active force, which has experienced maximum attrition during the first two years of service. Such studies do not provide insight in total reserve membership participation during one's entire military service obligation (MSO), which is now eight years. An understanding of the reasons individuals do or do not complete the initial eight year military service obligation is necessary to establish policies for long-term unit supportability and readiness.

One problem of attrition is that the current recruiting philosophy assumes that young adults will accept any MOS to qualify for the benefits of reserve membership, and that some acceptable MOS will be available at all locations. The lack of training opportunities (MOS-mix) often places the applicant and recruiter in a "take it or leave it" situation. If incentives are sufficiently strong, an individual will enlist. However, experience has shown that upon the completion of education or exhaustion of the incentive, these citizen-soldiers relocate for civilian opportunities or, lacking sufficient dedication to military service in the first place, simply stop attending required training.⁴⁴

⁴³For examples see David W. Grissmer and Sheila Nataraj Kirby, *Attrition of Nonprior-Service Reservists in the Army National Guard and Army Reserve*, RAND, October 1985 and *Changing Patterns of Nonprior Service Attrition in the Army National Guard and Army Reserve*, RAND, July 1988. George Thomas, et al, "A Preliminary Analysis of Enlisted Attrition in the Army Reserve," USAREC SR 86-10, November 1986.

⁴⁴Marquis, M. Susan, and Kirby, Sheila Nataraj, *Economic Factors in Reserve Attrition*, (RAND, Santa Monica, CA), R-3686-RA, March 1989, pp. v-vii, 41-43.

IV. ECONOMIC AND LABOR FORCE TRENDS

A. DEFENSE SPENDING TRENDS

The defense budget is overwhelmingly discretionary in nature and dependent on funding decisions by Congress. Defense represents about 5.3 percent of GNP today, a relatively low ratio by the standards of the last three decades, except during the immediate post-Vietnam era. Most projections indicate that defense spending will continue to fall throughout the 1990s and will almost certainly continue after 1993. Table 13 compares changes in the requested budget authority for the years 1992 and 1996 with the defense budget of 1990. The comparisons show how the budget relates to the base used in budget negotiations of 1990 and indicate that by 1996 the defense budget will be about 26 percent lower in real terms. The Bureau of Labor Statistics projects that defense spending may decline, in real terms, by as much as 1.8 percent annually until 2005,⁴⁵ which would result in defense expenditures representing only 3.5 percent of GNP.

Table 13. Real Changes in National Defense Budget Authority
(By fiscal year, in percent)

	<u>Real % Change Compared with 1990</u>	
	1992	1996
Military Personnel	-8	-24
Operations and Maintenance	-14	-27
Procurement	-28	-27
RDT&E	1	-22
Military Construction	-18	1
Family Housing	5	-2
Weighted Average	-14	-26

Source: Congressional Budget Office, "The Economic and Budget Outlook: Fiscal Years 1992-1996," January 1991.

Table 14 provides historical and projected end strength figures for each Reserve Component. Table 15 provides data on projected changes in active and reserve

⁴⁵"Outlook: 1990-2005," *Monthly Labor Review*, November 1991.

Table 14. Reserve End Strength, Actual and Projected (thousands)

Component	1980	1984	1988	1989	1991	1993	1995
Army National Guard	366.6	434.3	455.2	457.0	441.3	383.1	338.0
Army Reserve	213.2	275.1	312.8	319.2	299.9	257.5	229.4
Air National Guard	96.3	105.0	115.2	116.1	117.6	119.2	118.8
Air Force Reserve	59.8	70.3	82.1	83.2	84.3	82.2	82.4
Marine Reserve	35.7	40.6	43.5	43.6	44.0	38.9	34.9
Navy Reserve	97.1	120.6	149.5	151.5	150.5	125.8	118.3
Totals	868.7	1,045.9	1,158.3	1,170.6	1,137.6	1,006.7	921.8

Source: *Navy Times*, April 6, 1992, p. 11.

Table 15. Changes in Active Forces and Manpower, 1990 to 1995

	FY 90	FY 95	<u>Decrease</u>	
			Units	Percent
<hr/>				
	<hr/> Forces <hr/>			
Army Divisions				
Active	18	12	6	33
Reserve	10	6	4	40
Deployed Aircraft Carriers	13	12	1	8
Carrier Air Wings				
Active	13	11	2	15
Reserve	2	2	0	0
Battle Force Ships	545	451	94	17
Tactical Fighter Wings				
Active	24	15	9	38
Reserve	12	11	1	8
Strategic Bombers	268	181	87	32
<hr/> Manpower (in thousands) <hr/>				
Active	2,069	1,653	416	20

Source: "An Analysis of the President's Budgetary Proposals for Fiscal Year 1992, Congressional Budget Office, March 1991.

forces. In response to congressional budget reductions, the Department of the Army anticipates reducing active units by about 30 percent, principally reflecting the reduced European threat.

As illustrated in Table 15, Army Reserve units initially were to be reduced proportionately even more than active units.⁴⁶ However, efforts to reduce the Reserve Components have been delayed by Congressional directive and current studies will certainly revise these proposals in the final structure. The Secretary of Defense has indicated that in applying the new strategy of total-force structure, U.S. Reserve forces will decline by about the same percentage as active forces; however, future forces will not merely be a proportionally scaled-back version of the existing structure.⁴⁷ What this means in terms of future reserve force structure and recruiting goals is unclear at this time.

B. FACILITIES/BASE CLOSURES

During the past decade the USAR grew faster than any of the other reserve components in the Department of Defense. Despite that enormous growth in paid drill strength, there was no corresponding increase in resources to support the reservists. Table 16 illustrates the distribution of budgetary resources and personnel within the total Army.

Table 16. Distribution of Total Army Personnel and Budget, FY90 (in percent)

	Active	National Guard	Army Reserve
Total Army Structure (% personnel)	42	26	32
Combat	46	46	8
Combat Support	42	32	26
Combat Service Support	30	26	44
Funding (% budget)	85.7	9.8	4.5

Source: "Army Reserve Special Report 1991", Headquarters, Office Chief of the Army Reserve.

⁴⁶"Defense Budget and Program Issues Facing the 102d Congress," Statement of Charles A. Bowsher, Comptroller General of the United States, GAO Testimony T-NSIAD-91-21, April 25, 1991.

⁴⁷Cheney, Dick, "A Recipe for Lean, High-Quality Forces," *Defense 91*, Department of Defense, March/April 1991, p. 14.

Currently the USAR has only 53 percent of the facilities it requires, compared to 81 percent for the Army National Guard and an average of 87 percent for other reserve organizations. The backlog of construction, maintenance and repair is large and growing. As a consequence, productivity and training suffer, and maintaining troop morale is a constant challenge.⁴⁸ Although difficult to quantify, there are sound reasons to believe that the retention, morale, training level, and readiness of quality soldiers are directly related to the quality of facilities. For many reservists, the relevance of training, the sense of unit pride and cohesion, and the condition of the facility at which drills take place is very important in deciding whether to continue to serve.⁴⁹

The Base Realignment and Closure (BRAC) actions have not affected the geographic relocation or inactivation of any Army Reserve unit. The Army's policy has been to retain the Reserve's portion of an installation and list the remainder of the property as "excess." As the active military forces shrink, some of their assets — including equipment, facilities and trained personnel — may become available to the reserves. Base closures may also indirectly affect training range utilization, mobilization site requirements, maintenance support and other installation support activities. With closure of certain Army posts, the support requirements of Army Regulation 5-9 ("Intraservice Support Installation Area Coordination") will be adjusted. Any loss of military benefits and amenities may also contribute to a degradation of morale.

Several new USAR planning strategies have been proposed to cope with the facility problem. The first is to establish "metropolitan consolidated Reserve complexes" using government-owned property, especially active military facilities, where possible. These facilities would replace high-cost leased facilities. Facility locations would focus on urban and suburban environments with adequate market for recruiting and existing units that are geographically disjointed. The reserve complexes will provide multi-purpose uses, MOS and high-tech training on a regional basis, and be used daily rather than just on weekends.

The USAR also proposes to establish "regional consolidated Reserve support hubs" for annual training, maneuver exercises, base operational support and other

⁴⁸"The Chief, Army Reserve's Long-Range Plan 1990-2020," HQ OCAR, August 1990, p.3-5

⁴⁹"Army Reserve Special Report 1991," HQ DA OCAR, p 83

activities that require more space than provided at the metropolitan complexes.⁵⁰ Success of these facilities may depend on the relocation of similar reserve units — in terms of equipment, MOS or training requirements — in closer proximity of the support hubs. The input from U.S. Army Recruiting Command's Market Supportability Studies (MSS) and National Market Analysis (NMA) will be important in developing plans for long-term personnel supportability of these complexes and hubs.

C. THE FAMILY AND ECONOMICS

The impact of family income and civilian work patterns on the recruiting and retention of quality personnel in the reserve forces is not well known. For example, a recent Census Bureau report reveals that the greatest growth over the past decade has been in DEWKS — Dual Employed, With Kids — families. Together, DEWKS and DINKS — Double Income, No Kids — now represent the largest element of family market segments. We know very little about the effect of family employment and income status relative to the time requirements and economic incentives of the Reserves. For example, what motivates these households to seek a third income?

With the increase of double-income families, the discretionary time for the family unit has decreased. To view reserve duty principally as "moonlighting" behavior may miss the basic point of reserve service. Indeed, one analysis of the moonlighting theory of occupational choice found only a slight relationship between primary-job characteristics and reserve participation.⁵¹ The key variables affecting reserve participation are much more likely to involve reserve-duty conflicts with civilian employer and family time than with economic benefits.⁵²

Another opportunity cost of reserve service is the loss of vacation time. Employers are legally bound to provide military leave for reserve annual training; however, not all reservists receive military leave. Nearly 30 percent of reservist use vacation time or take unpaid leave of absence to meet reserve obligations.⁵³

⁵⁰"The Chief, Army Reserve's Long-Range Plan 1990-2000," Chief, Army Reserve, Washington D.C., August 1990, pp. 3-7 to 3-9.

⁵¹For current review of the subject see: Mehay, Stephen L., *Moonlighting and Reserve Participation: Are They the Same?* (U.S. Army Recruiting Command, Fort Sheridan, IL), USAREC SR 88-2, December 1988.

⁵²Moskos, Charles C., *Soldiers and Sociology*, pp 48-49.

⁵³Grissmer, David W., et al, "Improving Reserve Compensation," RAND, September 1989, pp 47-48.

Another element of the opportunity cost of reserve participation is the foregone wages that could have been earned from another moonlighting job or from overtime on the primary job. An estimate of what reservists forego in monetary benefits from other moonlighting jobs can be inferred from data on moonlighting. The reserve job offers limited working hours compared to other moonlighting jobs. Reservists typically work 232 hours a year,⁵⁴ much less than the average 960 hours a year worked by part-time jobholders or the median of around 700 hours a year worked by moonlighters.⁵⁵ For someone who wanted to maximize income by moonlighting or working only part-time, a civilian job would clearly yield greater monetary benefits.

D. YOUTH LABOR TRENDS

Today, only one-fifth of workers are younger than the baby boomers; by 2000 this share will double. All of the baby-bust and much of the baby boomlet generations will be of working age by 2000 and workers under age 35 will constitute fully 38 percent of the labor force. However, the labor force will be dominated by 35 to 54 year-olds, who will constitute one-half of workers. With many pension and retirement plans not keeping pace with rising cost-of-living, the BLS projects that the trend toward early retirement will end.

Many analysts have predicted a possible future shortage of skilled workers to perform jobs that are becoming increasingly technical. Bureau of Labor Statistics (BLS) projections suggest that this concern may be justified. Technical workers are projected to be the fastest-growing major occupational group over the next decade, and the supply is not keeping up with the demand.

There are two reasons for this shortage of technical workers. First, minorities represent a growing share of the youth population and are more prone to drop out of school. At the same time, an increasing share of high school graduates are attending college. These factors leave a shrinking pool of high school graduates and other youth available for vocational or on-the-job training that will be necessary to fill skilled jobs.⁵⁶ The individuals in this shrinking pool are also those most likely to make the military, active or reserve, a career.

⁵⁴Based on 16 hours a month in drills plus four extra days of work at annual training (assuming 10 of the 14 days of annual training substitute for civilian work).

⁵⁵U.S. Department of Labor, Bureau of Labor Statistics, "Employment and Earnings," May 1989.

⁵⁶Crispell, Diane, "Workers in 2000," *American Demographics*, March 1990, pp 38-40.

Another important trend is the rapid growth of service workers, many of whom will not need postsecondary education for their jobs. According to BLS projections, the labor force will need 4.2 million new service workers by 2000, compared with 1.2 million new technical workers. Three of the four occupations expected to offer the greatest number of jobs in the coming years — retail sales, custodial, and food service — do not require a high school diploma.⁵⁷ The occupations and skills offered in the Reserves, often promoted as “civilian-career enhancing”, may not meet the training and occupational needs of youth as the labor force continues to shift from a manufacturing to a service economy.

The major challenge of the future may not lie so much in balancing employers' need with workers' skills, as in balancing workers' personal needs with job demands. Middle-aged reservists will need alternatives to dead-end positions in both their civilian employment and reserve careers. The continued influx of women into the work force, including the military, ensures that child- and elder-care issues also will grow in importance.

E. INCOME DISTRIBUTION PATTERNS

The numbers of families in the “upper income” brackets will tend to grow more rapidly in the coming years. Several factors lead to this conclusion, principally the increasing monetary return to the cognitive skills, ability, and training needed for the white collar occupations of the future. In just eight years, 1980 to 1988, the premium for a college degree, in comparison with a high-school diploma, doubled. Coupled with dual-income families the result is that by the year 2010, 10 or 20 percent of the population will have sufficient income to avoid the military. Robert Reich has called this upward economic transition the “secession of the successful.”⁵⁸ As Table 17 indicates, the evidence suggests that a low percentage of young people from higher income groups are willing to delay entrance to college for military service, and those who are willing to enlist in the military are in the lower AFQT categories.⁵⁹

⁵⁷“Outlook: 1990–2005,” *Monthly Labor Review*, November 1991.

⁵⁸Murray, Charles, *National Review*, July 8, 1991, p. 30.

⁵⁹“Social Representation in the U.S. Military,” Congress of the United States, Congressional Budget Office, October 1989, pp 69–73

Table 17. Family Income and Enlistment Probability

Family Income (Thou)	Enlistment Probability When Youth Expect <u>More Education</u>		Probability of Enlistment <u>By AFQT Group</u>	
	Yes	No	Upper	Lower
\$0- 10	.044	.083	.037	.121
10- 15	.036	.038	.031	.099
15- 20	.030	.036	.026	.079
20- 25	.025	.034	.023	.062
25- 30	.021	.032	.019	.049
30+	.018	.030	.016	.039

Source: Congressional Budget Office from Defense Manpower Data Center and U.S. Census Bureau, "Social Representation in the U.S. Military", October 1989.

Future recruiting difficulties are reflected in the income distribution of the geographic areas from which active Army recruits are drawn. More than 15 percent of male recruits come from geographic areas in the bottom 10 percent of the income distribution, less than 5 percent from areas in the top 10 percent, and more than 60 percent from the bottom half. The diversity in recruits' home-area income is much greater for the reserve than the active components. Presumably, this greater diversity reflects the situations in the particular local areas in which units happen to be located. Future reserve recruiting, particularly in the non-prior service market, may be impacted by changing household income patterns in the local market area. As income rises, mission requirements will be more difficult to meet; as income falls, a greater percentage of lower AFQT volunteers will be supplied.

V. THE RECRUITING EFFECTS OF LOCAL ECONOMIC CONDITIONS

Prior Studies have estimated reserve enlistment supply models based on data aggregated to geographic levels that represent the "market" areas facing Reserve Centers or recruiters. These models have proven useful for both planning purposes and predicting future enlistments. The models provide information on the responsiveness, or elasticity, of enlistments to various quantifiable factors, especially economic and employment conditions, in the local area. Each estimated elasticity indicates the percentage effect on enlistment of a given percentage change in one of the explanatory variables in the model. Three prior studies have focused principally on USAR enlistments; although the three differ in a number of important respects, they provide a range of estimates for the relevant elasticities.

Mehay⁶⁰ used cross sectional observations based on Reserve Center "market areas." Each market area was defined to include the geographic area contained within a 35-mile radius of a Reserve Center. Models were estimated for both non-prior service (NPS) and prior service (PS) USAR enlistments in 1986. In Mehay's model, the local area enlistment rate was specified to depend on the following characteristics of the local market area:

- (a) the ratio of military to civilian wages in the market;
- (b) the local unemployment rate;
- (c) the ratio of Army recruiters to the youth population in the area;
- (d) mission per recruiter;
- (e) the population out-migration rate; and
- (f) the level of competition with the Army National Guard.

Mehay's statistical results are summarized in Table 18.

The estimates suggest that non-prior service recruiting is mildly sensitive to pay and unemployment, with a 10 percent increase in the pay ratio and unemployment increasing enlistments by about 13 and 19 percent, respectively. Enlistments are also highly responsive to increases in the number of recruiters in an area, but only slightly responsive to assigning more goals per recruiter. The population out-migration rate also is positively correlated with non-prior service enlistments. Finally, areas with a larger national guard membership (i.e., competition) appear to have reduced PS and NPS enlistments.

⁶⁰Mehay, Stephen L. "Determinants of Enlistments in the U.S. Army Reserve," *Armed Forces & Society*, vol. 16, Spring 1990, 351-368.

Table 18. Elasticities From Mehay USAR Enlistment Supply Study

Variable	Non-prior Service Enlistments	Prior Service Enlistments
Military-Civilian Pay Ratio	.13	.40
Unemployment Rate	.19	*
Recruiters per Youth Population	.58	.16
High Out-migration Rate	.05	*
Mission per Recruiter	.03	.03
National Guard Presence	-.21	-.64

Source: Mehay (1990).

Notes: * indicates variable not statistically significant.
Dependent variable = enlistment rate in 1985.

Goldberg⁶¹ argued that studies relying on cross sectional data provide an inaccurate basis for forecasting enlistments at the local or regional level. As a solution to this problem, Goldberg used pooled time-series cross sectional data to estimate USAR supply models. Observations consisted of annual data for FY 1985-89 for the geographic areas around Army Recruiting Stations (RSIDs), at which individual recruiters are located. Each recruiter supports the accession requirements of all Reserve Centers located within his geographic area. Goldberg's supply models were estimated using a "fixed effects" technique that accounts for omitted local area factors. By isolating the temporal variation in the data, he produces less biased coefficients that are more useful for forecasting purposes.

Table 19 illustrates some aspect of the problems associated with data based strictly on cross sectional differences. Local markets in Southern states routinely achieve above-average recruiting and readiness success, as shown in column 1, due to a higher propensity for military participation. Nonetheless, they are often labeled as poor markets because of the low "density" levels, defined as the ratio of military available youth population to reserve manpower requirements. That is, the population to support reserve unit requirements is below average (average=100) in the South, but the higher military propensity in Southern communities more than offsets the low population figures. Goldberg's estimating technique is designed to account for these local area differences in enlistment and participation propensity.

⁶¹Goldberg, Lawrence, "Estimation of USAR Enlistment Models," Economic Research Laboratory, Reston, VA, December 1990.

Table 19. Unit Fill, Attrition, Length of Participation in USAR Units, and Density (by selected states)

State	Fill Rate (%)	Annual Attrition Rate (%)	Avg Months Participation	Density (QMA/Required)
South				
LA	110	27.5	27.2	102.7
MS	103	21.5	27.8	84.8
NC	105	29.2	27.1	98.7
VA	100	25.8	27.9	91.9
WV	102	28.4	27.5	54.1
West				
AZ	118	39.9	25.3	242.7
CO	104	42.8	24.2	140.0
NV	111	38.1	25.9	308.5
OR	107	42.5	24.2	313.1
National Average	94	32.0	26.6	107.6

Source: FORSCOM FORSTARS FY90

The specification of one of Goldberg's estimated models was similar to Mehay's basic model. The elasticities for this model are displayed in the upper panel in Table 20 and, in general, they exceed those generated in the Mehay study. Of particular interest is the large coefficient on the relative pay variable: it suggests that reserve enlistments are highly sensitive to changes in relative pay. Since military pay is constant across geographic areas at a point in time, this suggests that regional differences in civilian pay can have a sizable impact on reserve participation.

Goldberg also estimated a second model with an entirely different set of independent variables. These included: qualified youth population levels (QMA), population per square mile (density), National Guard presence in the area, and the number of Regular Army recruiters. The lower panel in Table 20 presents the fixed effects results for this model. These results indicate that NPS enlistments are mildly sensitive to population changes, while PS enlistments are somewhat more sensitive. The competition effect with the Army National Guard is fairly small compared with the effect estimated in the Mehay study. Finally, the small magnitude of the effect of the coefficient on density suggests that the emphasis (by USAREC planners) on density as a single measure of market supportability may be inappropriate. Market suitability, both current and future, is affected by a host of factors that are not captured in the density measure.

Table 20. Elasticities From Goldberg USAR Study—Models 1 and 2

Variable (Model 1)	NPS Male High Quality	PS
Recruiter man-years	.93	.90
Mission per recruiter	.49	.62
Military-civilian pay ratio	.88	1.91
Unemployment rate	.29	.06
<hr/>		
Variable (Model 2)		
QMA population	.11	.24
Density (QMA/area)	.02	.11
National Guard presence	-.07	-.15
Regular Army recruiters	-.02	.04

Source: Goldberg (1990).

Tan⁶² used quarterly data for FY 1981–86 pooled for 65 Military Entrance Processing Stations (MEPS). These geographic areas do not correspond with any relevant USAR “markets,” but instead represent an aggregation of local area markets. Despite this drawback, the models in the Tan study provide average elasticities that can be used to validate those in the previous two studies. Tan estimated USAR supply models via both OLS and instrumental variables (IV) techniques. The latter technique was used to control for the possible simultaneity between recruiting goals and enlistments. The OLS estimates are most comparable to the Mehay and Goldberg studies, and are presented in column 1 of Table 21; the instrumental variables (IV) estimates, are presented in column 2. The two types of estimators provide similar results, except in the case of population, which has a zero coefficient in column 1. As expected, because Tan’s data is highly aggregated, his estimates appear to lie midway between the high estimates provided by Goldberg and the lower estimates of Mehay. Also of interest, Tan finds evidence in the data of an explicit tradeoff between PS and NPS enlistments.

⁶²Tan, Hong W. “Non-Prior Service Reserve Enlistments,” R-3786-FMP/RA, Santa Monica, CA: RAND Corporation.

Table 21. Tan's Enlistment Models for NPS, High-Quality Males

Variable	OLS Estimate	IV Estimate*
QMA Population	.00	.26
Unemployment Rate	.29	.33
Recruiters	1.04	1.18
Military-civilian Pay Ratio	.61	.67

Source: Tan (1991).

Notes: * Simultaneous estimates

Table 22 summarizes the range of elasticities obtained for USAR enlistment supply in the three prior studies with respect to the main variables of interest. The range is smallest for the unemployment rate, which consistently displays an elasticity of between .2 and .3. The range is also low for QMA, which varies from zero to .26. The range, however, is much greater for recruiters, pay, and mission. The variation among the three studies is accounted for in part by the vast differences between each of the three studies in data samples, variable definitions, and estimating techniques. Nonetheless, these estimates provide baseline data for determining the relationships between local area conditions, USAR policies, and reserve enlistments. They also provide models for forecasting future enlistments.

Table 22. Summary of Estimated USAR Enlistment Elasticities

Variable	<u>NPS Enlistments</u>		<u>PS Enlistments</u>	
	Low Estimate	High Estimate	Low Estimate	High Estimate
Recruiters	.58	1.18	.16	.90
Relative Pay	.13	.88	.40	1.91
Unemployment Rate	.19	.33	.06*	—
QMA Population	.00	.26	.24*	—
National Guard Competition	-.07	-.21	-.15	-.64
Mission	.03	.49	.03	.62

Source: Tables 18, 20, and 21.

Notes: *Only one estimate available.

As an example of the use of these models for forecasting, Tan combines his elasticity estimates with projections of the relevant policy and economic variables to predict future USAR enlistments. One of the advantages of Tan's estimates is that they are based on a fairly long time series, which provides stable average values of the elasticities; thus, forecasts for more distant future periods are more reliable.

The key assumptions underlying the scenarios developed by Tan are:

- (1) the size of future NPS accession goals;
- (2) the state of the economy (i.e., the unemployment rate);
- (3) changes in relative pay; and
- (4) the size of the recruiting force.

When an increase in the accession requirement is assumed (which, in fact, occurred in 1990), recruiting shortfalls are predicted through 1994 under various other assumptions. The predicted shortfall was the smallest when an increase in recruiting resources was assumed. When the NPS recruiting goal is assumed constant over the forecast period, rather than rising, goals are either met or shortfalls are very small.⁶³ Although his predictions are no longer reliable, developing such scenarios is a useful exercise for manpower planners because it forces attention to the factors that will be most important in determining the direction of recruiting during the forecast period.

One relevant question is: How far in the future can econometric models be used to reliably project enlistments? Future projections are usually made for the short-term (one year or less), or the medium term (2–5 years). However, such models can be useful for longer term forecasting if the basic underlying conditions, and thus the estimated coefficients, can reasonably be assumed to remain stable. In addition, the elasticities can provide a range of response rates within which the true long-term rate is likely to lie. With this in mind, what lessons can be drawn from these models for directions in Reserve recruiting over the long-term future?

First, it appears that trends in the youth population do not significantly affect Reserve recruiting. This econometric finding appears to be confirmed by the experience of the early 1990s when the declining youth cohort had little impact on overall recruiting success. One could conclude that this factor, by itself, will not seriously influence future recruiting. For example, the upturn in the youth cohort expected to occur in the mid-1990s will not yield a recruiting bonanza. Since the upturn itself will be small, and the estimated elasticities are so small, the upturn will pass largely unnoticed in the recruiting world.

The same minor effect cannot be attributed to all enlistment determinants, however. Using the Goldberg findings, relative pay differences across geographic

⁶³Tan's forecasts of reserve recruiting shortfalls were based in part on a predicted increase in real youth wages as the youth population cohort declined throughout the early 1990s. Of course, in fact, just the opposite occurred: the real pay of high school graduates dropped throughout the 1980s and continues to do so in the 1990s.

areas can have sizable effects on enlistments — both PS and NPS. Moreover, regional pay differences may be long-lasting, as well as cyclical, in nature and provide early indicators of persistent recruiting problems in given reserve locations. For example, reserve recruiting in the Northeast region has been weak for many years, perhaps due in part to the large civilian-military youth pay gap. Unemployment has a smaller effect than relative pay, but one which is robust in all three of the prior studies. Once again, unemployment is largely a cyclical phenomenon, but when structural problems occur in the region's or community's economy, the effect can persist over a long period.

Of course, one would be hesitant to base permanent unit stationing decisions on factors such as fluctuations in regional unemployment or pay levels. Moreover, areas experiencing significant structural employment and economic problems tend to also experience high out-migration of the local population, especially the youth population. Thus, individuals who enlist in response to short-term economic pressures may simply attrite later when they leave the area in search of more stable employment. Mehay,⁶⁴ for example, provides some evidence that unit fill rates are lower in areas of high unemployment. This suggests that the effect of high unemployment on enlistments may be offset by its effect on attrition and unit personnel turnover. In terms of unit personnel readiness, the unit located in an area of high unemployment may be no better off than one in an area of low unemployment and robust economic growth. Table 19 above also indicates that two areas with equal, and above average, unit fill rates may experience vastly different attrition rates, and thus unit readiness levels. Thus, enlistment supply models provide only one piece of a complex puzzle of how local areas support the overall personnel readiness of units and centers.

Nonetheless, knowledge of the direction of variables such as pay and unemployment can provide important information on recruiting problems or successes, both nationwide and locally. The models indicate that the elasticities of enlistments with respect to recruiters at least in the NPS market, exceed those of the other explanatory variables. Thus, when forecasts project local recruiting difficulties that are expected to be temporary, one policy may be to add recruiters to an area by shifting them from other areas. This policy can be reversed when conditions in the problem locale have abated.

⁶⁴Mehay, Stephen L. "An Enlistment Supply and Forecasting Model for the U.S. Army Reserve," SR-89-2, Ft. Sheridan, IL: U.S. Army Recruiting Command, July 1989.

From a long-term perspective, prospects concerning pay are fairly positive for reserve recruiting nationwide. As was discussed in Section III.C., real pay for high school graduates deteriorated during the 1980s, and most forecasters predict a continuation of that trend. If military pay can keep pace with inflation, the reserves should experience little difficulty in attracting the quantity and quality of required accessions in future years. Of course, this assumes everything else is equal, and given federal budget problems and the general military downsizing, future recruiting resources may well be reduced. It is unlikely, however, that cuts of recruiting resources would be of such a magnitude as to jeopardize overall reserve recruiting success.

VI. RECENT DIRECTIONS IN RESERVE POLICIES

A. ACCESSIONS AND UNIT VACANCIES

Historically, there have generally been ample enlistment opportunities in the reserves for all potential candidates. Recruiters identified USAR unit vacancies from the Forces Command's REQUEST system. Reserve units listed actual shortages and estimated projected losses during the next twelve months. When actual vacancies did not exist, unit personnel (at the request of recruiters) could input an appropriate vacancy authorization, often reserved for a specific individual by social security number. Reserve units were even allowed "manning authorization" that exceeded their maximum wartime personnel requirements.⁶⁵ The objective of this policy was to allow USAR commanders the flexibility to maintain sufficient strength to enable their units to deploy with 100 percent of wartime required strength; the result was that either vacancies often exceeded any possibility of accessions, or strength levels exceeded funding authorizations.

Recently this situation has changed. Defense manpower reductions and budget constraints have led to curtailment of "on demand" enlistment authorizations. Moreover, vacancies are based only on actual personnel shortages or known losses. Units with personnel overstrength must institute management policies to reduce manning levels. One important effect of these new policies is to restrict the availability of enlistment opportunities.

In addition, tighter restrictions have been imposed on prior service assignments to reserve units. Previously there was a loosely enforced policy that required MOS-compatibility of prior service assignees. It was believed the variety of training opportunities available through OJT, USAR Schools, active duty schools and other programs were sufficient to meet training needs. In reality, many prior service enlistees never met MOS-qualification requirements.⁶⁶ These new restrictions on MOS-compatibility for prior service accessions has led to a decline in accessions from that source. The same policy affected transfers to USAR troop units (TPUs) from the

⁶⁵HQDA MSG R232052Z OCT 86, SUBJECT: RC Overstrength Policy.

⁶⁶"Opportunities to Improve National Guard and Reserve Policies and Programs," GAO/NSIAD-89-27, November 1988, pp. 54-56 and *Improving Reserve Compensation*, RAND, pp 100-101.

Individual Ready Reserve (IRR). Table 23 illustrates how this new policy has reduced USAREC prior service accessions.⁶⁷

Table 23. Sources of Selected PS Accessions to USAR TPUs by Fiscal Year

Source	FY 87	FY 88	FY 89	FY 90
From Active Duty	7,317	10,821	8,357	7,071
From IRR	18,170	20,146	22,547	14,577
Other Sources	17,255	14,773	15,303	18,794
Total PS	42,742	45,740	46,207	40,442

Source: DMDC Reserve Component Strength: DD-RA(M)1147/1148

Moreover, Recruiting Command does not enjoy exclusive access to the personnel accession system. Reserve unit retention personnel and Transfer Agents, active Army installation In-Service Recruiters (ISCs), and the reserve units themselves process many personnel actions that fill authorized vacancies. As shown in Table 24, over 40 percent of unit gains have been transfers between existing USAR units rather than recruiter-initiated personnel accessions. An understanding of the local scope and impact of these actions is necessary so that an accurate recruiting mission, based on available vacancies, can be determined.⁶⁸

Complicating local Army Reserve recruiting is competition from other services and components. A recent survey of Army Reserve marketing officers,⁶⁹ indicated that competing market demands by other military branches are not well understood by recruiters nor quantified by analysts. For example, Army National Guard and Army Reserve units may or may not be competitive depending on occupational requirements, local incentives and community support. Since data are not readily

⁶⁷Compounding recruiting difficulties is the "stop-loss" policy imposed on enlisted personnel from the active forces during fiscal year 91 as a result of manpower requirements for Desert Storm.

⁶⁸For an analysis of geographic transfers and migration in the USAR see Stephen L. Mehay, "An Analysis of Migration in the USAR," Technical Report NPS-AS-91-015, Naval Postgraduate School, Monterey, CA, 1991.

⁶⁹"Results of Structured Interview with U.S. Army Recruiting Command USAR Marketing Officers.," Market Research Laboratory, Marina, CA, December 1989.

Table 24. Inter-unit Transfers and Total Accessions to USAR Troop Program Units (enlisted personnel)

Source	Year			
	FY 87	FY 88	FY 89	FY90
Inter-unit Transfers	49,727	52,236	51,309	50,540
USAREC/ISC Enlistments	74,589	75,989	75,446	76,605
Total Unit Gains	124,316	128,225	126,755	127,145

Source: DMDC Reserve Component Strength: DD-RA(M)1147/1148 and SIDPERS Transaction (TCODE) files

available on these topics, the ability of local markets to support reserve unit authorizations and recruiting goals cannot be accurately evaluated.

The relationship between the Army Reserve and the Army National Guard in local recruiting markets is a major issue. Army Reserve and Army National Guard units differ to some degree by force structure (unit types), command and control limitations, and mission responsibilities. However, certain types of Guard and Army Reserve units tend to compete directly, especially in the non-prior service market. For example, it is believed that combat Guard units would directly compete with combat Army Reserve units for similar applicants, while a combat Guard unit and medical Army Reserve unit would not.

Decisions to accept new roles and form new units in the reserve require an adequate market strategy to determine manpower resources and locationing. The ability to man the Total Force Structure is paramount; readiness is the key component to mobilization success and it cannot be achieved without qualified personnel. The reserve forces should not be expected to continue to modernize and maintain units without in-depth knowledge of local market conditions and resource requirements.

B. MANAGEMENT OF RESERVE ACCESSIONS

Current Army Reserve and Army National Guard recruiting and assignment policies require that the primary source of unit members be located within the center/armory "market areas." Army Reserve markets include the area within a 50-mile radius of a reserve center. Successful recruiting requires an adequate population pool in the market area to meet requirements for specific MOSs. Existing reserve recruiting and marketing strategies require sophisticated models to predict

supportable levels of specific MOS strength levels by geographic (market) location. Such models provide a significant contribution to reserve recruiting goals, unit readiness, force mix and locationing decisions.

Future reserve end-strength and military budget constraints will severely test the ability to recruit for reserve forces. Most major commands have begun to intensively manage unit vacancies and proscribe enlistment authority. "On demand" enlistments which often added non-required (overstrength) unit vacancies for specific individuals have been eliminated. Policy has shifted to MOS-specific recruiting requirements. Reserve recruiters often must reject several otherwise qualified applicants to locate one who meets all the enlistment requirements and is willing to accept the specific MOS available at the local reserve unit. Because of this new policy, some markets may be inadequate to recruit for specific MOSs. These locations must be geographically identified and the level(s) of specific MOS supportability quantified.

Many reserve units have requirements for MOSs in low grades which must be filled by non-prior service enlistments. Examples include the highly skilled MOS 91C (medical corpsman) in medical units and 71L (clerk-typist) in administrative and personnel units. Unfortunately, these units also have not been identified nor have the available NPS markets been evaluated for specific geographic recruiting supportability.

Some new policies have been introduced to meet MOS-specific recruiting needs. Prior service individuals with critical, "hard-to-fill" MOSs are being assigned to units with shortfalls regardless of geographic location; the individual is then attached to the closest unit for training in basic soldier skills. Other reserve units have expanded their market areas by creating "sections" and "detachments" (some unofficially) at distant geographic locations. Other possible solutions to meet MOS-requirements include: (1) relocating selected units or sub-units; (2) attaching critical skill reservists to the nearest USAR center for administrative authority with assignment to another unit which requires the skill (Unit Mobilization Augmentation — UMA); (3) providing alternative training opportunities or requirements at the unit level (Drilling Individual Mobilization Augmentation — DIMA); or (4) permitting overstrength authorizations of critical MOSs for units with adequate geographic markets. Individuals recruited via policy (4) would be identified for specific mobilization backfill at units with shortfalls. Units with overstrength or attached personnel

would require additional resources to provide administrative, training and logistical support.⁷⁰

C. MOS TRAINING AND PROMOTION ELIGIBILITY

There would appear to be no end to the MOS-qualification and readiness problems associated with the training requirements for the reserves. At the onset of mobilization for Operation Desert Storm, it was not unusual to find over 50 percent of reserve personnel to be unqualified for their duty position. The introduction of modern weapon systems into the reserve components has resulted in a significant decline in readiness because personnel require additional training to learn the new systems. For example, when the Army's M-48/M-60 tank is replaced by the M-1 tank, a tank crewman must be retrained in a new military occupational specialty. The delays in providing adequate training time has delayed training and completion of MOS qualification.⁷¹

Most Army advanced individual training courses only teach a fraction of the critical tasks associated with a skill. Reservists who attend Bradley system mechanics training, for example, are taught only half of the critical tasks for that skill, while those in the light-wheel-vehicle mechanics course cover only 29 percent of the tasks.⁷² Reservists are expected to receive the remainder of their training in the reserve unit. Unfortunately, many units lack personnel, time, facilities and equipment to provide the necessary additional skill training.⁷³

Another problem is that extended training may create new attrition problems. The pilot program of a three-week annual training period at the National Training

⁷⁰Army Reserve Special Report 1991, Office Chief of Army Reserve, May 1991, p 15.

⁷¹General Accounting Office, "Opportunities to Improve National Guard and Reserve Policies and Programs," pp. 54-56.

⁷²"Skill Qualification of National Guard and Reserve Member," Statement by Richard A. Davis, GAO, before Subcommittee on Military Personnel and Compensation, HCAS, March 10, 1988, p.11.

⁷³New rules for promotion eligibility recently have sought to align the active requirements for attendance at NCO Education System courses with unit leadership levels, and to link completion of these courses to promotions. Under the plan, completion of leadership and MOS-specific phases of the Primary Leadership Development Course (PLDC), Basic NCO Course (BNCOC), Advanced NCO Course (ANCOC) and Sergeants Major Course (SMC) will be required for promotion eligibility. No mention is made of where the time will be found to provide this additional training. One thing is well known however, promotions — or the lack of them — are consistently cited as the number one reason for attrition. Any policy that delays promotion eligibility will contribute to reserve losses and add to future recruiting requirements and readiness degradation. "MOS-specific test a new requirement for reservists," *Army Times*, August 26, 1991, p. 3.

Center (NTC) resulted in a 29 percent increase in NTC-trained unit attrition and a 25 percent increase in NTC-slanted unit attrition; this attrition was attributed to the scheduled NTC training. The result, after adjusting for personnel transfers to non-NTC units, was an overall increase in reserve attrition of 21 percent.⁷⁴

Further evidence of the impact of extended training time comes from the 1986 Reserve Component Survey. Respondents were asked how likely they were to reenlist in the reserves under three scenarios: the current training schedule, the current schedule plus two extra four-hour drills per month, and the current schedule plus an additional week of annual training. The results indicated that any additional training would reduce reenlistment rates of junior grade personnel by 7 to 13 percentage points.

Improving unit readiness requires development of initiatives to augment reserve training in critical skills, particularly in units that have more difficult training missions or simply need to travel longer distances (or more frequently) to training facilities. In addition, some personnel require more time for planning for training and administrative work. However, additional training requirements without additional compensation could lead to higher turnover

D. LOCATION AND MARKET POTENTIAL

Historic location patterns of reserve units are probably the single most important factor affecting recruiting success. Some local markets are inadequate to recruit satisfactory numbers of enlistments for specific MOSs.⁷⁵ One problem is that the Army's two reserve components have developed separate methodologies to determine site selection and unit location. Each model evaluates specific demographic market characteristics that are considered critical for unit supportability. However, neither components' model adequately evaluates the market effects of the recruiting activity of the other component.

Although the Army Reserve and National Guard share common recruiting objectives and markets, the impact of the total force structure on unit-specific

⁷⁴Grissmer, David W., Buddin, Richard, Kirby, Sheila N., *Improving Reserve Compensation*, R-3707-FMA/RA (Rand, Santa Monica, CA) September 1989, pp 104-106

⁷⁵General Temple, retired Chief of the National Guard Bureau, observed that inability to maintain Army National Guard unit strength maintenance in the Northeast is caused primarily by poor locations of the units and changing markets. Such demographic misalignment occurs elsewhere and in both reserve components. For example, the only two (USAR) Armor Training Divisions that require significant prior service in a specific MOS are concentrated in Wisconsin and Illinois. The units have consistently suffered low strength and MOS-qualification (readiness) problems. *Army Times*, July 23, 1990.

accession requirements and supportability is unknown. Shared markets should be managed to avoid unnecessary competition, offer maximum participation opportunities to applicants, and insure unit strength supportability for the Total Army. A significant contribution to Army strength maintenance would be a reserve stationing methodology that includes identification of the force mix (USAR and ARNG), by type and size, best supported by local market conditions. These locations should be geographically identified and the level(s) of specific MOS supportability estimated.

Given that Reserve center facility acquisition/construction can easily take five years, and the unit strength should be maintained for 20 additional years, identifying primary market locations requires accurate projections of future market potential many years into the future. For growth planning purposes, the location of future units might well be in those neighborhoods currently populated by young families and a minimum number of military-aged individuals. For purposes of future market supportability, elementary school population could be a primary consideration rather than the traditional QMA measure. If the population is not transient, (that is, mature families with teenagers migrate to other locales and are replaced by other young families), then the elementary school population will be of enlistment age by the time Reserve unit construction and placement is complete. Likewise, USAR centers located where high schools are closing should be downsized — but not necessarily closed — to wait for the age-population cycle to return.

Highway construction plans have provided good indications of future geographical growth patterns. The USAR facility appraisal group at Sixth U.S. Army included local transportation and projected highway construction as key elements of their location models.⁷⁶ As these roadways isolate some communities and open up other areas to development, planners must be ready to adjust Reserve Center locations. Modular facilities, providing lower construction costs and flexibility, might be one option to provide the ability to quickly shift locations as markets change.

E. MEASURING MARKETS

In order to measure the reserve recruiting potential of a specific area, USAREC analysts have relied on measures of "density" (the ratio of population to reserve unit authorized enlisted strength) and historic "market share/take" (the ratio of enlistments to population). Section V gives several reasons why these indicators do not always adequately measure true market potential. There are other weaknesses in

⁷⁶"Demographic Evaluation of Units System (DEUS) Model," Sixth U.S. Army and USAREC pilot program, November 1979.

the traditional density measure. First, substantial portions of the population have no interest in military service. Second, historic locations of reserve units may restrict the opportunity of individuals to enlist due to lack of appropriate or acceptable military occupations. Third, local problems such as poor facilities, current leadership, or public support, may inhibit enlistments.

Only about 12 percent of the qualified male youth population indicate knowledge of and interest in enlistment in the reserve forces and an even smaller percentage indicate a positive propensity for enlistment in the USAR.⁷⁷ Also, some military occupational specialties are difficult to fill due to stringent test score requirements, long training periods, or negative perceptions of the duty assignment. In a study of USAR training units, it was found that local "survivor" rates of prior service enlistees ranged from an average of 13 to 25 months and varied across regions: survival rates were higher in the South and lower in the West.⁷⁸

Each of these factors affect the ability to recruit for and maintain reserve unit strength. A comprehensive index could be developed to weight local population estimates in terms of their ability to support specific MOS recruiting requirements. When determining the market supportability of a specific geographic location for a reserve unit of a specific type; it is also essential that estimates be developed of the portion of otherwise qualified individuals who might enlist for the MOSs offered. Likewise, USAREC mission models should reflect the potential of a reserve recruiter's market to support the specific available vacancies.

The development of propensity measures have two primary objectives: (1) to adjust measures of military available population (QMA) by including the proportion of the population that is both qualified and interested (QMA&I), and (2) to adjust the mission requirements and enhancement of market supportability studies to reflect local enlistment behavior in response to reserve opportunities and constraints.

F. ATTRITION

The management of USAR attrition is a key component in the development of an optimal force configuration. High attrition contributes to manpower costs and personnel management difficulties, and increases reserve accession requirements. In

⁷⁷For an extensive discussion of USAR propensity see Gorman, Linda and Mehay, Stephen L., "Estimating Local Area Propensity for the USAR: A Feasibility Study," USAREC SR 89-4, June 1989.

⁷⁸Swibies, Gerald M., *A Preliminary Analysis of the Force Location of USAR Training Organizations*, (U.S. Army Recruiting Command, Fort Sheridan, IL), USAREC SR 88-1, February 1988, p 23.

Fiscal Year 1988, USAREC, for the first time since it assumed the USAR recruiting mission, failed to make the reserve recruiting mission. Due to inadequate funding for reserve manpower, the Army Reserve Forces have not achieved the required enlisted end strength since 1975. To make matters worse, up to 40 percent of the USAR is not MOS-qualified and not an asset for instant mobilization. Some of these problems may be corrected by not counting thousands of individuals in the training pipeline as Troop Program Unit members. But aside from this, the high attrition and mobility of young soldiers is a continuing problem.⁷⁹

Moreover, the downsizing of the active Army will reduce, by the year 2000, the number of soldiers leaving active duty and the numbers of Individual Ready Reservists with a military service obligation (MSO). This will reduce the prior service recruiting market. Consequently, the non-prior service accession requirement may rise to over 50 percent of total accessions by the year 2000.

Previous USAR cohort attrition studies have analyzed the first two years of a Reservist's enlistment and assumed that any loss, primarily transfers to the IRR, is a permanent change.⁸⁰ As a result, the studies do not provide total man-year benefits by accession source. They do suggest that traditional enlistment screening requirements do not provide an adequate screen to prevent USAR losses. The turbulence created by individual movement (particularly geographic relocation) is generally believed to degrade readiness and increase training requirements and costs. However, the full impact of these actions is not well understood.

Unfortunately, the data to fully evaluate strength supportability have not been developed. For example, while parts of California and Texas have a similar propensity index, Texas has lower attrition rates while California has higher immigration rates. The result is similar fill rates, and recruiting requirements, but radically different readiness rates. On the other hand, Arizona has few authorizations and overfill of existing units, which has resulted in excessive attrition

⁷⁹"Opportunities to Improve National Guard and Reserve Policies and Programs," GAO Report NSIAD-89-27, Nov. 1988, p 52.

⁸⁰For examples of studies see: Grissmer, David W., and Kirby, Sheila Nataraj, *Changing Patterns of Nonprior Service Attrition in the Army National Guard and Army Reserve*, (RAND, Santa Monica, CA), R-3626-RA, July 1988. and Thomas, George W., et al, *A Preliminary Analysis of Enlisted Attrition in the Army Reserve*, USAREC SR 86- 10, November 1986; See: Grissmer, David W., and Kirby, Sheila Nataraj, *Changing Patterns of Nonprior Service Attrition in the Army National Guard and Army Reserve*, (RAND, Santa Monica, CA), R-3626-RA, July 1988; Thomas, George W. and Davis, Helen, *USAR Prior Service Market: A Comparison of Reenlistment Motivations with Reserve Enlistment Motivations of Active Duty Personnel*, Naval Postgraduate School, NPS-54-88-017, December 1988.

and poor readiness due in large measure to inadequate training, administrative support, leadership and facilities. To develop future plans for reserve recruiting, the Department of Army could develop a reserve component market plan to include locationing and recruiting, coupled with a more careful analysis of the relationship between reserve and guard local manpower requirements to better identify long-term strength supportability.⁸¹

To meet the challenges of manning the Army Reserve in the 21st century, the Army needs to identify skills required on a geographic basis and measure the factors that influence attrition. In addition to retention management tools, increased emphasis must be placed on force mix and stationing, family support systems, monetary incentives, and alternative training options. The Army Reserve's ability to perform its essential mobilization missions within the Total Army is, in great part, a result of the high quality and properly motivated young men and women who are recruited, as well as the experienced soldiers who fulfill their contractual obligations.

⁸¹Gerald M. Swibies, "The Historical Development of the U.S. Army Recruiting Command's National Market Analysis (NMA)/Troop Action Program (TAP)," Naval Postgraduate School, October 1988 and "Comparison of the USAREC Market Supportability System and the Requirements of DOD Directive 1200.1," Naval Postgraduate School, September 1988.

VII. IMPLICATIONS FOR USAR PROGRAMS AND STUDIES AT USAREC

The Army Reserve and Army National Guard comprise over 50 percent of total Army force structure. The Total Army Analysis (TAA) develops the Army's force mix and mission assignments. Currently, there is no standard model or methodology used to develop the optimal reserve-active force mix, which could then be used as a basis for decision making in the annual TAA, or subsequent Troop Action Guidance (TAG) or Troop Action Program (TAP) activities.

Three separate commands within the Army Reserve develop force support/sustainment models. The Chief, Army Reserve (OCAR) and other DA agencies utilize the FORECAST (and other DA systems) for strength projections. Forces Command (FORSCOM) utilizes the FORSTARS system for end strength projections and identification of recruiting requirements. The US Army Recruiting Command performs market supportability (force location) studies for USAR TPUs and USAR missioning using a combination of data from the USAREC-USAR Litton Computer System database and FORSTARS data. Such variables as the current manpower requirements differ among these various models. For example, depending on which end strength is used (CONUSA authorized, VTAADS wartime required or budget caps), and future requirements are estimated (Vacancy, Attrition rates or Shortfall), planners will arrive at different recruiting requirements.⁸²

A. MODELING THE FUTURE

Models developed to forecast reserve recruiting requirements and market supportability often lack consistent data input, rely on subjective interpretation, and have seldom been validated. Population projections for future growth are often based on differing characteristics (particularly age and education level factors) and units of observation (ZIP Code, three-digit ZIP, county, MSA, state, etc.). None of the existing USAREC models provide estimates of actual Reserve growth potential; rather, the analysis is based the maintenance of current strength levels yielding a zero-sum, no-growth estimate.

⁸²The Army National Guard has an even more complex system involving the 54 states and territories plus the National Guard Bureau. Moreover, ARNG organizational and personnel data is not easily accessible to Army Reserve decision makers. For example, the USAREC-USAR data on Guard TPU locations and strength requirements, necessary to develop competition indices, is not validated for ZIP Code location and strength accuracy. For much of its strength data, the National Guard Bureau relies on local state data rather than national source files.

The U.S. Army Recruiting Command uses a series of models for decision making and policy determination. These models estimate market supportability for new or reorganized unit strength, develop recruiter resource and location requirements, and establish the accession mission, in terms of both quantity and quality. While each model evaluates similar data concerning reserve unit demands and market supply, they fail to measure the feedback effects of the separate decisions. Policy decisions are grounded not on the total information base but on partial findings developed in each specific model. Also, data from one model are not shared or integrated into the other decision-making models. Consequently, existing methodologies fail to predict future Reserve strength growth potential or address the issue of readiness (MOS-qualification rates and mobilization assets). Policies and decisions — such as mission assignment, unit location, or recruiter strength — are made in a specialized vacuum and require later resolution when secondary effects are felt. Furthermore, long-term planning does not build on an integrated accumulation of all previous actions. Integration of effort is difficult, and in some cases impossible, due to the lack of adequate data and systems interface.

The next four sub-sections discuss specific analyses conducted by USAREC. They discuss weaknesses and improvements needed in these models if they are to provide more accurate projections of future reserve markets.

B. THE USAR RECRUITER ZONE ANALYSIS (RZA) AND MISSION MODELS

The general intent of the RZA is to develop a standardized, USAR recruiter distribution scheme that considers recruiting potential, historical production, propensity, geo-demographic market factors, and market quality. By conducting RZAs, USAREC's goals are:

- (1) To optimally distribute on-production USAR recruiter resources throughout the Recruiting Battalions by identifying and defining individual USAR recruiter zones and USAR unit requirements based on the most complete data available.
- (2) To ensure USAR recruiters have an equitable share of the available market and therefore, a relatively equal chance at being successful.

The RZA process primarily assigns recruiters to specific geographic locations. The models are constrained by the data available to describe the complexities of market relationships. To make an informed decision, the analysis is often supplemented by the Recruiting Battalion's knowledge of local conditions.

The RZA process provide a standardized evaluation of market conditions with respect to population, status of existing USAR and ARNG units, USAR unit and recruiting requirements, and indices of historical recruiting activity. The data bases developed as the result of the RZA are also used in analyses of distribution of facilities and resources and implementation of organizational changes.⁸³

The "mission model" uses similar information to assign a mission (goal) to each recruiter. The stress in recruiting is on non-prior service, high school diploma graduates who score in test score categories I-III A — the "high quality" market. Reserve recruiting missions tacitly assume that high-quality young people will remain at the location, or at least in the occupational specialty (MOS) for which they enlist, long enough to be a mobilization asset. In fact, high-quality recruits are among the most highly mobile segments of society and therefore, may be detrimental to the long-range readiness of the Reserves.⁸⁴ Such a mission philosophy may be a major contributor to current problems of strength maintenance (completion of initial obligation and reenlistment) and unit readiness. Individuals in lower mental categories, who are geographically more stable, may be better bets for maintaining long-term reserve unit strength and readiness levels. At a minimum, the mission model may need to include an analysis of migration of Reserve members.

C. THE MARKET SUPPORTABILITY STUDY (MSS)

Strategic plans and policies relating to the Army Reserve force structure, utilization, personnel supportability and resource requirements are integrated into overall defense strategic plans and policies. There is a special need for guidance on the factors that should be considered when deciding active and reserve component personnel strengths, force mix, stationing, and mission responsibilities.

The US Army Recruiting Command (USAREC) performs market supportability studies on proposed site locations for newly activated or reorganized USAR Troop Program Units when the net change exceeds 30 enlisted personnel. USAREC also provides the Continental Armies (CONUSAs) with a summary report by

⁸³The RZA does not attempt to analyze explanatory rationale for recruiting requirements or market conditions. Such factors as physical location of the center and recruiting stations, quality of leadership and/or training, propensity for military service, competition from other reserve activities, and other local economic, geo-demographic and psychographic conditions may produce similar mission and recruiter resource requirements for dissimilar reasons. In developing long-range reserve recruiter location strategies, these limitations of the analysis require users to develop local sources of information to apply in the final decision process.

⁸⁴See Mehay, "An Analysis of Migration in the USAR".

geographical location (city name) which estimates supportable enlisted strength levels for aggregated USAR and ARNG units.

None of the reports provides estimates of actual growth potential; rather the analysis is based on assumptions of "status quo" market parameters utilizing an average state (or national) "density factor." This density factor is based on the total military available population (males aged 17 to 29) divided by the current authorized strength. The density measure does not take into account geographic variations in quality (particularly educational achievement), propensity for military service, or types and intensity of various sources of competition.

While the current MSS studies are sufficient for relocations of small units, a more sophisticated model is needed for predicting supportable increases of larger units. With the creation of metropolitan consolidated Reserve complexes and regional consolidated Reserve support hubs, together with Base Realignment and Closure (BRAC) actions, much more comprehensive and detailed analyses will be required to evaluate proposed stationing actions that will involve large strength levels.

The population base from which to recruit reservists is declining and shifting. From 1980 through the year 2000, the national military manpower pool (males age 17 to 29) will decline nearly 13 percent. However, the Southern and Western states will experience overall increases of the youth population segment. Based on current location of Reserve units, with a disproportionate share of units in the Northeast, this could easily lead to strength maintenance problems through the year 2000. After 2000, the youth manpower pool begins to rise again with significant growth projected to occur in the South, Southwest and Western states.

In each instance, successful strength maintenance of Reserve Forces lies in the ability and willingness of the local population to support the authorization requirements of local units. This sounds easy enough — put the units where the folks are and watch them fill up. The problem is: leasing is fragmented and often inadequate; construction is on a five- to seven-year plan; force structure planning is on a seven-to ten-year plan; and facilities are expected to last from 20 to 30 years. At the same time, existing force location methodology evaluates historic activity and current demographics but has little information concerning future long-term growth potential.

D. THE NATIONAL MARKET ANALYSIS (NMA)

The scope of the NMA is best described as an overview of the future growth potential of the USAR. The report is produced annually by the U.S. Army Recruiting

Command (USAREC) and used by the Department of Army (DA), Forces Command (FORSCOM and Office of the Chief of Army Reserve (OCAR) during the Total Army Analysis (TAA) process. The purpose is to provide estimates of total U.S. Army Reserve (USAR) enlisted strength support levels and broad geographic force location recommendations. In addition, USAREC uses the NMA to respond to external requests regarding significant changes in the strength and/or location of Reserve units. Currently there is no standard methodology for conducting the NMA. The NMA report should be able to quantify the support levels and predict future support levels within reasonable confidence intervals, so that decision makers will have the data necessary to forecast long-term Reserve force structure and mix.

Previous National Market Analyses have used a variety of assumptions, variables, statistical methods and units of observation.⁸⁵ The NMA should predict future maximum Reserve enlisted strength support levels by geographic areas. It should identify those areas in which authorizations (demand) exceed the supply, and are candidates for removal or relocation of units, as well as those areas in which supply exceeds demand and to which existing units could be relocated or new ones activated.

With the development of improved estimates of the reserve-qualified population, adjusted for propensity and competition, it is possible to provide local area accession potential under a variety of force structure conditions. In addition, USAR and ARNG supportable strength levels could be projected to the year 2010 for the appropriate unit of observation. These projections can be used by decision makers to determine the total Army Reserve supportable structure and geographic location or relocation of units. Through the deliberate assignment of appropriate strength of a variety of types of units, the results will allow for the penetration of each market area to provide maximum strength supportability. There is adequate youth population to support an even larger Army Reserve and National Guard force — with high mobilization readiness. New centers and armories need to be constructed in growing population centers, each with a variety of MOS opportunities. Historically, the Army moved with or ahead of the population, building forts and outposts. Somehow, the Reserve and Guard have lost that momentum.

⁸⁵A discussion of those procedures is provided in: Thomas, George W., Mehay, Stephen L., Swibies, Gerald M. "The Historical Development of the U.S. Army Recruiting Command's National Market Analysis (NMA)/Troop Action Program (TAP)," Naval Postgraduate School, October 1988.

E. FUTURE SCENARIOS

The Army is in an awkward position. By preparing for everything, it is not able to do a great deal of any one thing. Because so many assets are in the reserve components, the Army may not be the best position to execute a worldwide "strategic concept" to deal with multiple contingencies in Europe, Asia, the Middle East, and the Caribbean. As one analyst has noted: "Never before has a global power been so dependent on part-time warriors to meet its expeditionary commitments."⁸⁶ Yet, neither is it well postured to use its active-duty forces to deal rapidly with a single but significant threat (for example, the build-up time required to get equipment to the Persian Gulf).

During the military build-up of the Reagan administration, the Army preferred modernizing its equipment to expanding its force. Consequently, its dependence on the Reserve and National Guard grew. This dependence would not be a source of concern if reserve components came close to matching their active-duty counterparts in capability and readiness. However, as indicated previously, problems abound: many units lack equipment; much of the material is not up-to-date; facilities are poorly located relative to recruiting markets; and training time is limited. No doubt some of the manning and equipment deficiencies could be made up by increased resources. In principle, training for reservists could be increased, but increased training time has been correlated with higher attrition.⁸⁷

Of equal importance is the strategic planning with respect to reserve mobilization in times of conflict. Essentially, there appear to be four scenarios of force structure and mix with implications for the USAR:⁸⁸

- a. **"Postwar Army"** This scenario continues a reduction of the active Army by approximately 25 percent but cross-levels combat arms, combat support, and combat service support units. As a result, the AC/USAR/ARNG force structure mix would become more balanced with the USAR increasing its proportion of combat arms units. However, following all the realignments, activation, and inactivations, reserve component end strength will likely remain relatively constant in size.
- b. **"Contingency Force"** This scenario reorganizes the active Army into a smaller self-contained organization and relegates the reserves to a reinforcement role. In total size, USAR force structure would probably

⁸⁶Gold, Philip, "What the Reserves Can — and Can't — Do," *Public Interest*, 75 (Spring, 1984): 47-61.

⁸⁷Binkin, Martin, *U.S. Army Guard and Reserve: Rhetoric, Realities, and Myths*, pp 126-138.

⁸⁸"The Chief, Army Reserve's Long Range Plan 1990-2020," OCAR, HQDA, August 1990, pp 2-21 to 2-22.

reinforcement role. In total size, USAR force structure would probably decline. Non-combat equipment would be stockpiled throughout the world for emergency use. Reserve units would be limited to heavy force, absorbing the equipment and missions of returning, inactivated forward-deployed active units and be destined as "mothball units".

- c. **"Army of Citizens"** In this scenario, the active Army is reduced even further (by 35 to 50 percent) and the USAR force structure is increased to maintain cadre and selected combat arms units. New unit stationing will follow national demographics with coordinated USAR/ARNG centers.
- d. **"Lessons Learned"** In this scenario, the force strength levels proposed prior to Desert Storm will be implemented. However, the National Guard will be reduced in selected light infantry units where the manpower can be as quickly drafted, trained and deployed as Guard units could have been mobilized, refresher trained and deployed. Reserve structure would remain about the same with a reduction of training divisions (one Armor and two others such as the 91st Training Division in response to the closure of Fort Ord), a reorganization of major medical and personnel units, and an increase in smaller special skill units such as water purification, chemical-biological-radiation, and linguists.

Each of these scenarios has particular implications for future recruiting requirements and other actions required by USAREC in response to relocation, activation stationing, and inactivation of existing USAR units. The impact of National Guard personnel and unit structure reorganizations also could significantly affect Army Reserve local market supportability.

VIII. SUMMARY

How the trends and scenarios identified in this report will affect recruiting for selected markets is difficult to quantify. However, Table 25 presents a taxonomy of the likely direction of the effects of various trends and projections. Entries with a question mark indicate either that the trend has opposing effects or that the net effect is unknown. Entries with a zero indicate the trend is expected to have a minor effect.

Table 25. Taxonomy of the Effect of Various Trends and Projections on Recruiting in Selected Markets

Trend/Projection/Policies	Non-Prior Service	Prior Service	High AFQT	Females	Minorities
Declining Youth Population	-	0	-	0	+
Single Families	-	0	0	-	?
Dual Income Households	0	-	0	-	?
Aging of Reservists	-	-	0	-	-
Industry/Occupation Shifts	+	+	+	+	+
Youth Wage Trends	+	+	+	+	+
Scenario a ("Postwar Army")	-	+	-	?	+
Scenario b ("Contingency Force")	+	+	+	0	0
Scenario c-("Army of Citizens")	-	?	-	0	?
Scenario d ("Lessons Learned")	+	+	-	0	0

Source: See text

The size and the mission of the Reserve Forces is changing. This realization, and recent developments concerning the utilization and force mix of the U.S. Army Reserve and Army National Guard, could well require new policies and procedures for total supportable strength, mission requirement (type unit mix) and selection of unit locations.

Until we have assurances that Europe has the willpower to contain its national and ethnic conflicts; that nuclear weapons are eliminated from China, North Korea, Libya, Iraq and a dozen other countries; that terrorists and dictator-inspired

terrorists will not wreak havoc on the innocent — we cannot ignore the enduring lesson of military history: when an enemy is capable of doing something he may quite possibly do it.

If the total force policy is to succeed, the Army must ensure that the allocation of resources is consistent with the principles of strategic policy. For example, the Army must be more realistic in assigning roles to the reserves. It may not be reasonable to expect reserve combat forces to achieve, on a part-time basis, the proficiencies required of a regular brigade — particularly if the brigade must deploy within the first 30 to 60 days of a contingency. The Department of Army must also reexamine how it sets priorities for personnel, training, and equipment in peacetime to ensure that those forces it depends on to sustain combat operations can be quickly readied to deploy. Recruiting and marketing emphasis should be given to identifying and developing “niche” markets for specific types and sizes of units, rather than engaging in struggles over declining markets.

By identifying shifting population trends and closely coordinating force strength and location decisions, future force structure can be translated into supportable manpower requirements. The location of reserve units and future strength maintenance would be more assured in meeting the needs of both the military and the youth population.

APPENDIX A

ISSUES PERTAINING TO LONG-RANGE PLANNING (FUTURES) FOR RESERVES

A central tenet of strategic planning is that a proper match between the external conditions facing an organization and its internal capabilities is critical to its performance. Accordingly, in recruiting for the Army Reserve, it is important to find and create an alignment between the demographic, economic and political environment and the future manpower requirements of reserve units. Within the reserves, this strategy is complicated because of the interaction of force structure between the active, Guard and Reserve components.

The effectiveness of a strategy will largely depend on how well we identify, monitor and correctly assess the impact of major developments in the external environment in juxtaposition to systems for determining current organizational effectiveness. The approach used is based upon identifying and forecasting critical trends and their impact upon the reserve recruiting organization, and planning accordingly.⁸⁹ The approach advocated here is that we identify potential future events and develop their implications for Army Reserve recruiting if they should occur. By taking into account critical trends and events, we should be able to develop a more anticipatory, proactive, long-range plan.

Appendix A is a summary of the guidelines used by the author to develop the themes of this report.

I. SOCIAL AND DEMOGRAPHIC TRENDS

Increasing life expectancy of U.S. population
Increasing age of U.S. population
Decreasing availability of U.S. military age youth 18-24 years old
Increasing migration of U.S. population from Northeast and Midwest to the West and South
Reverse (slowdown) of migration to rural areas
Restructure of suburbs from "bedroom" communities to self-sustaining "cities"
Increasing immigration
Increasing number of Asian and Hispanic citizens
Decreasing U.S. birth rate
Increasing U.S. population
Increasing higher education requirements — military and civilian
Decreasing public support for large Active Army
Decreasing public support for overseas stationing of Active Forces

⁸⁹"Chief, Army Reserve's Long-Range Plan - 1990 Edition," memorandum, February 1990.

Increasing public perception that the Cold War is ending
 Public perception that an Army of Warriors is not necessary
 Increasing public interest of women in combat
 Increasing number of women in the military
 Increasing percentage of minorities in the military
 Increasing numbers of lower economic classes in the military
 Decreasing job security in the Active military
 Increasing number of single parents
 Increasing options for leisure time
 Decreasing amount of leisure time
 Increasing need for child care
 Increasing number of dual income families
 Increasing number of women in the workforce
 Increasing public perception that social needs are more important than security needs
 Increasing awareness of social problems — starvation, homeless, drugs, health care costs, environment, illegal immigration, smoking, alcohol, AIDS,
 Increasing frequency of unemployment

II. TECHNOLOGICAL TRENDS

Increasing battlefield surveillance capabilities
 Increasing ability to tailor weapons designs
 Increasing reliance on automation
 Increasing speed and availability of worldwide transportation
 Increasing expansion of information technology and systems
 Increasing communications capabilities
 Increasing availability of on-shelf software programs
 Increasing number of countries with nuclear and chemical capabilities
 Increasing use of robots and laser technology
 Increasing shift of technological leadership to other countries
 Increasing distribution of information through electronic media
 Decreasing R&D commitment
 Increasing use of alternative energy sources

III. ECONOMIC TRENDS

Decreasing U.S. economic power
 Decreasing percentage of U.S. GNP for defense
 Increasing third world debt
 Increasing transfer of U.S. industrial production capability to other countries
 Decreasing supply of fossil fuels
 Increasing erosion of military benefits
 Increasing potential for economic collapse of the USSR
 Declining value of the U.S. dollar
 Decreasing supplies of military hardware
 Increasing market economy in Warsaw Pact countries
 Increasing trade with Pacific rim countries
 Increasing European and Japanese military budgets
 Increasing European Common Market cooperative economic ventures
 Increasing investment of U.S. companies in foreign markets
 Increasing foreign ownership of U.S. assets
 Increasing competition from sources including military weapons and technology
 Increasing number of minimum wage jobs/service sector

Increasing civilian work force corresponding with reduction in active military force levels
Increasing number of base closures
Decreasing defense spending

IV. POLITICAL TRENDS

Increasing challenge of the need for military alliances
Increasing use of the military for public works and war on drugs/terrorism
Increasing influence of third world countries
Decreasing Eastern European threat
Decreasing importance of NATO and Warsaw
Increasing reliance on Reserve Components
Increasing number and scope of arms control agreements
Increasing USAR stature within the "Total Army"
Decreasing stability in Europe
Increasing turbulence in Latin America, USSR, Middle East and Africa
Decreasing number of congressmen with military experience
Decreasing number of forward bases in Europe and Far East
Increasing isolationism in the U.S.
Increasing interest groups influence on Congress
Increasing congressional support for the USAR
Increasing political support for downsizing of U.S. forces
Decreasing support for "not-in-my-backyard" response to base closures and lost defense industry contracts
Increasing Legislative Branch control of or influence on foreign affairs
Increasing number of shifting alliances in global politics
Increasing isolation of China, Iran, Syria, Cuba
Pressures for solution to hostage/Lebanon situation
Increasing political turbulence in Japan
Increasing political turbulence in Israel
Increasing political turbulence in South Africa

V. CRITICAL EVENTS THAT COULD AFFECT THE ARMY RESERVE IF THEY OCCUR

A. SOCIAL EVENTS

Eliminate CAT IV ceiling/Increase CAT IIIB enlistment
Drug cartels form and use private armies
Class war erupts in Middle East or Latin America
Power struggle/revolution in Cuba or China
Repeal of Posse Comitatus
Use Army Reserve for drug interdiction
200,000 AC drawdown enters the USAR
Adoption of Spanish as a second language
Ethnic composition of reserves becomes more than 50% non-white
Women are authorized in combat arms
Female participation in military services exceeds 30% of force

B. TECHNOLOGICAL EVENTS

Tanks become obsolete
SDI breakthrough and implementation
Individual soldier has communication capability

Robotics/Energy weapons used on the battlefield
Third world nations achieve/use nuclear weapons
Terrorists achieve nuclear capability
Foreign made military hardware are purchased for U.S. forces

C. ECONOMIC EVENTS

Depression/major recession somewhere (U.S., Europe, Japan)
U.S. and EEC for alliance against Japan/Pacific Rim
National Health Insurance
USAR unit funded to ALO 2 (upgrade from ALO 3)
Pay/benefits for reserves increase, parity with AC
Fully equip USAR
Multiple base closures/loss of USAR facilities
Merger of USAR and NGB
CONUSAs reduced
Reserve force strength reduced
Reserve force strength increased

D. POLITICAL EVENTS

Governors given control of deployment of Guardsmen
RC (USAR and NGB) commanded by RC three star
Return to the cold war (crackdown in USSR)
Ethnic/Civil War in USSR/Baltic countries
NATO breaks up
Female/minority president is elected
Europe 92 occurs
Implementation of National Service

VI. RESERVE PERFORMANCE INDICATORS

A. TRAINING

Percent of soldiers MOSQ
Percent of soldiers duty MOSQ
Percent of units attaining C3 or better readiness
Number of units where ARTEP is 95% "go"
Percent of soldiers passing APFT
Percent of soldiers passing ITEPs
Percent of battle focus training time
Percent of soldiers passing Skill Qualification Test
Percent of soldiers passing Common Skills Test

B. EQUIPMENT

Percent of units with MEET on-hand
Percent of units with Operational Readiness at least 90%
Percent of units with equipment at 10/20 standards at least 95%
Percent of units that have equipment to support CAPSTONE mission
Percent of unit with force modernization equipment
Percent of units attaining C-3 or better in EOH readiness

C. MAINTENANCE

Percent of units that schedule maintenance on training schedule
Percent of units that perform maintenance as scheduled
Percent of units not meeting DA standards (FMC, NMCS, MNCM)
Percent use of RTS sites
Percent of required tool kits on hand
Percent of end items deadlined
Percent fill of maintenance personnel
Percent of units not meeting AR 220-1 maintenance standards
Number of accidents
Number of outstanding spare part/high priority part requests

D. LEADERSHIP AND MANAGEMENT

Percent of officers BOC/OAC qualified
Percent of officers CAS3 qualified
Average number of awards per unit
Percent of NCOs who have attended NCOES
Number of IG complaints
Number of pay complaints

E. FORCE STRUCTURE

Percent of units below ALO
Percent of units meeting their mobilization strength requirement
Percent of unit C-3 or better
Percent CA, CS, CSS units in reserve compared to AC
Percent CA, CS, CSS in USAR compared to NGB

F. MANPOWER

Percent manageable loss rate (retention)
Percent units at 100% strength
Number of vacancies
Percent of officer turnover
Percent of enlisted attrition
Number of high skill (MOS specific) vacancies

G. MOBILIZATION/DEPLOYMENT

Percent of units with substandard Mobilization Plans
Percent of units that rehearse load plans
Number of units participating in mobilization exercises
Percent of units that pass MOBEXs
Number of company sized units that can arrive in theater of OPNS prepared to fight
Number of company sized units that can perform ODT including deployment and mobilization

H. INFORMATION MANAGEMENT

Percent of out-of-data MIS
Percent of units without access to ADP
Percent of full-time staff trained in MIS
Percent on-hand of hardware inventories

I. FACILITIES

Dollar amount of construction backlog
Percent of USAR Centers that have adequate space for training
Percent of units with Weekend Training Sites within 75 miles
Number of modern USAR Centers
Number of centers co-located on AC facilities subject to closure
Percent of current facilities considered inadequate
Percent of fill & space utilization

J. STRENGTHS OF THE RESERVE

Provides unique capabilities needed for national defense
Quality of personnel has improved dramatically
Provide unique MOSs not broadly available in the AC
Full-time support system in place
Cost less than AC
Serves as CBT Multiplier for AC
Provides grassroots support for the military
CAPSTONE assignments enhance force structure
Less hampered by tradition and organization thinking
Contributes to local economies

K. WEAKNESSES OF THE RESERVE

Inadequate training time
Insufficient pay of younger soldiers
Insufficient number of full-time personnel
NPS recruits (high school) most mobile group
Inadequate leadership training opportunities
Inadequate communications
Inadequate facilities
Inadequate training locations
Inadequate equipment
Outdated equipment
Inadequate training devices and simulators
Lack of AC support for 23 USAR unique MOSs
Inadequate direction from DA, AC and CONUSAs
Poor image with the AC
Archaic training requirements
High enlisted attrition in TPU
Geographic dispersion
Historical locationing not supportable with population migration
CAPSTONE misalignment
Cumbersome support system through the RC
Excessive non-training requirements
Unproductive weekends
Too many layers of command and control
Insufficient funding

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